

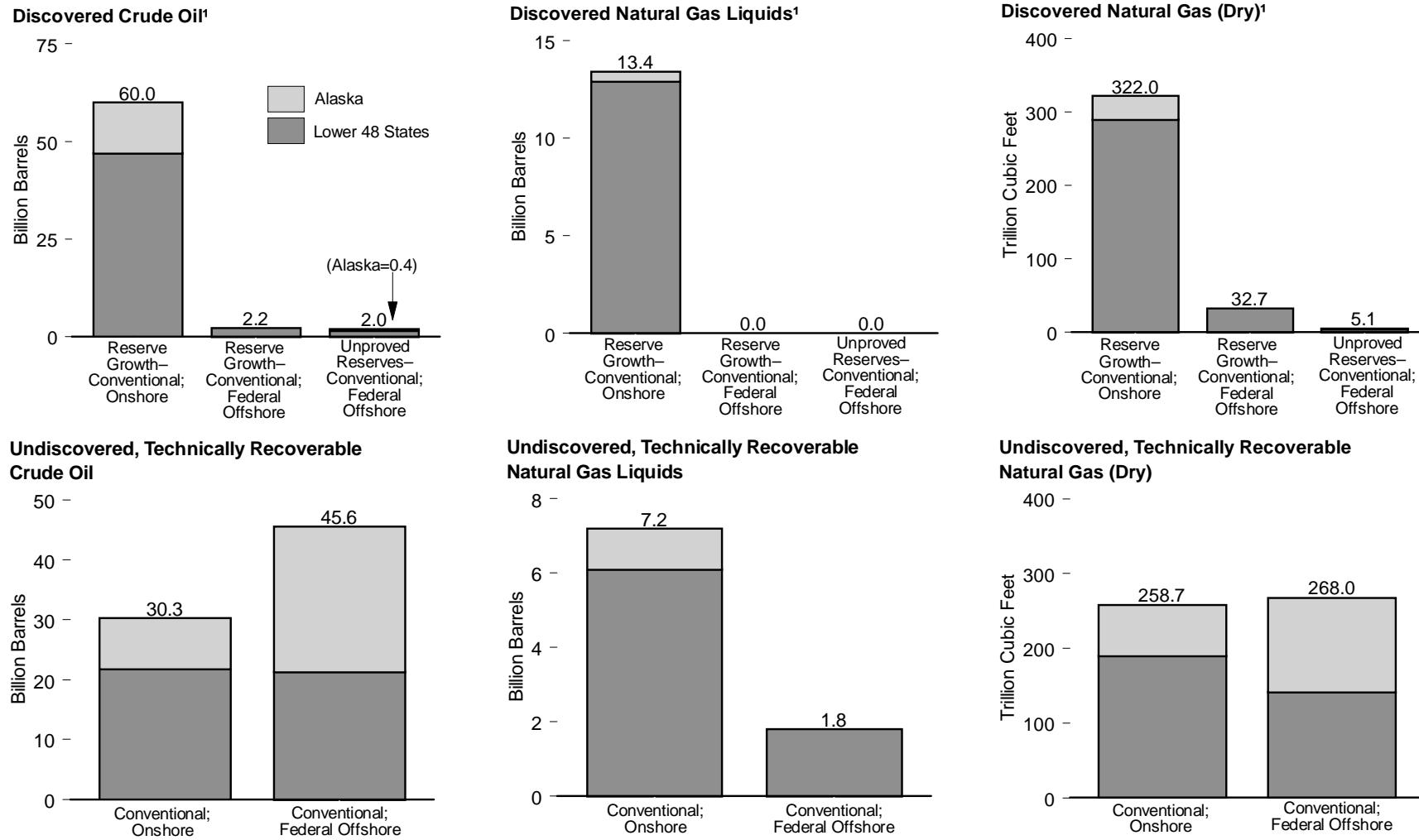
# 4

# Energy Resources



Semisubmersible drilling rig in the Gulf of Mexico. Source: U.S. Department of Energy.

**Figure 4.1 Technically Recoverable Petroleum Resource Estimates, January 1, 2000**



<sup>1</sup> Excludes proved reserves, which are more certain than the resource estimates shown here.

Notes: • See Table 4.1 for detailed notes. • Because vertical scales differ, graphs should not be compared.

Source: Table 4.1.

**Table 4.1 Technically Recoverable Petroleum Resource Estimates, January 1, 2000**

Region	Crude Oil <sup>1</sup> (million barrels)			Natural Gas Liquids (million barrels)			Natural Gas (Dry) (billion cubic feet)		
	Alaska	Lower 48 States	United States	Alaska	Lower 48 States	United States	Alaska	Lower 48 States	United States
<b>Discovered <sup>2</sup></b>									
Reserve Growth (Conventional; Onshore) .....	<sup>3</sup> 13,000	447,000	<b>60,000</b>	500	12,900	<b>13,400</b>	32,000	290,000	<b>322,000</b>
Reserve Growth (Conventional; Federal Offshore) .....	0	<sup>5</sup> 2,238	<b>2,238</b>	NE	NE	0	0	<sup>5</sup> 32,719	<b>32,719</b>
Unproved Reserves (Conventional; Federal Offshore) .....	400	1,643	<b>2,043</b>	NE	NE	0	700	4,436	<b>5,136</b>
<b>Undiscovered, Technically Recoverable</b>									
Conventional (Onshore) .....	8,440	21,810	<b>30,250</b>	1,120	6,080	<b>7,200</b>	68,410	190,280	<b>258,690</b>
Conventional (Federal Offshore) .....	24,300	21,300	<b>45,600</b>	( <sup>6</sup> )	<sup>6</sup> 1,800	<b>1,800</b>	125,900	142,100	<b>268,000</b>
Continuous-type (in Sandstone, Shales and Chalks; Onshore) .....	NE	2,066	<b>2,066</b>	NE	2,119	<b>2,119</b>	NE	308,080	<b>308,080</b>
Continuous-type (in Coal Beds; Onshore) .....	NA	NA	<b>0</b>	NA	NA	<b>0</b>	NE	49,910	<b>49,910</b>
<b>Net Cumulative Change Since Resource Estimation<sup>7</sup></b> .....	NA	NA	<b>-17,461</b>	NA	NA	<b>-6,634</b>	NA	NA	<b>-133,119</b>
<b>Total</b> .....	<b>NA</b>	<b>NA</b>	<b>124,736</b>	<b>NA</b>	<b>NA</b>	<b>17,835</b>	<b>NA</b>	<b>NA</b>	<b>1,111,416</b>

<sup>1</sup> Condensate is included with crude oil for Minerals Management Service (MMS) estimates in Federal Offshore regions.

<sup>2</sup> Excludes "proved reserves," which are more certain than the resource estimates shown in this table.

<sup>3</sup> Using U.S. Geological Survey (USGS) definition, 952 million barrels of indicated additional oil reserves were included (Energy Information Administration (EIA), year end 1996).

<sup>4</sup> Using USGS definition, 1,924 million barrels of indicated additional oil reserves were included (EIA, year end 1996)

<sup>5</sup> Reserve growth in the Pacific Federal offshore is not included. It was not estimated by MMS.

<sup>6</sup> Alaska is included in Lower 48 States.

<sup>7</sup> See Sources.

NA=Not available. NE= Not estimated.

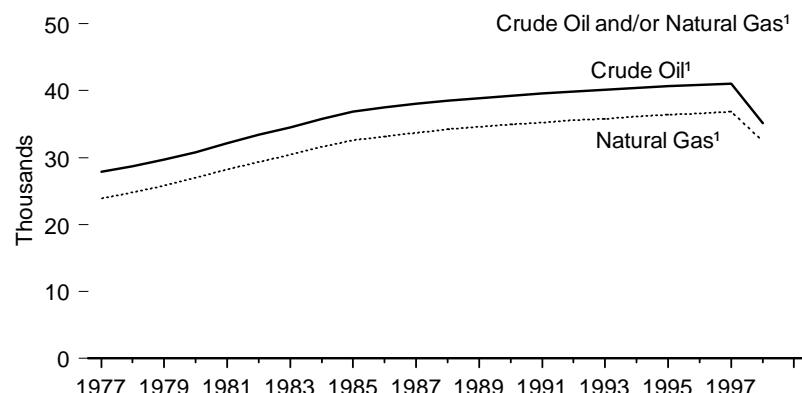
Notes: • See Note 1 at end of section. • Onshore indicates estimates for all Onshore plus State Offshore waters (near-shore, shallow-water areas under State jurisdiction). • Federal Offshore denotes MMS estimates for Federal Offshore jurisdictions (the Outer Continental Shelf and deeper water areas

seaward of the State Offshore jurisdictional boundary). • The USGS mean estimates are as of year-end 1993 (onshore and State offshore). The MMS mean estimates are as of year-end 1994. Probable and possible reserves are considered by the USGS to be part of reserve growth but are separately estimated by MMS as unproved reserves. USGS did not set a time limit for the duration of reserves growth; MMS set the year 2020 as the time limit in its estimates of reserve growth in existing fields in the Gulf of Mexico. Excluded from these resource estimates are undiscovered oil resources in tar deposits and oil shales, and undiscovered gas resources in geopressured brines and gas hydrates. • Data may not sum to totals due to independent rounding.

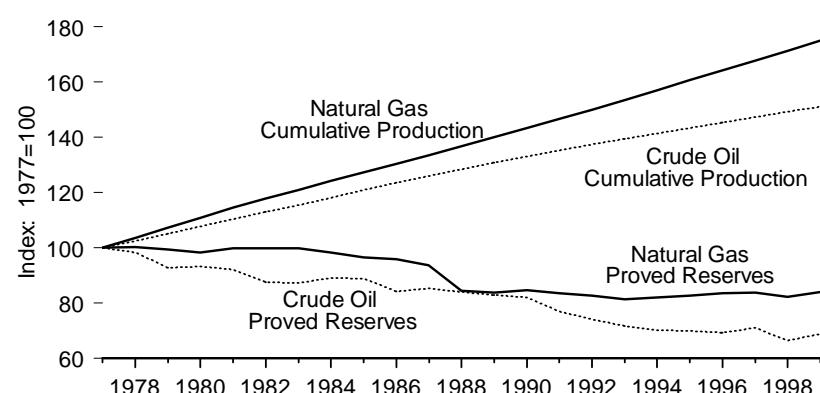
Sources: **Federal Offshore:** U.S. Department of the Interior, Minerals Management Service. *An Assessment of the Undiscovered Hydrocarbon Potential of the Nation's Outer Continental Shelf* (1997), OCS Report MMS 96-0034. **Onshore:** U.S. Department of the Interior, U.S. Geological Survey (USGS), *1996 National Assessment of United States Oil and Gas Resources*, USGS Circular 1118. **Unproved Reserves (Conventional; Onshore):** Energy Information Administration, *U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves Annual Report 1999* (December 2000), Table G1.

**Figure 4.2 Crude Oil and Natural Gas Field Counts, Cumulative Production, Proved Reserves, and Ultimate Recovery**

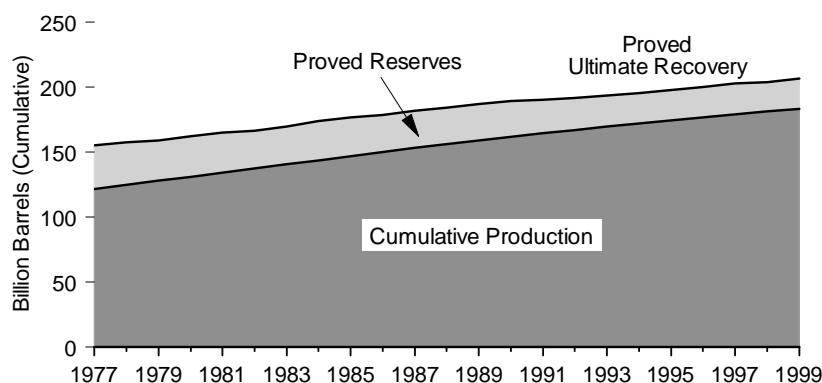
Cumulative Number of Fields, 1977-1998



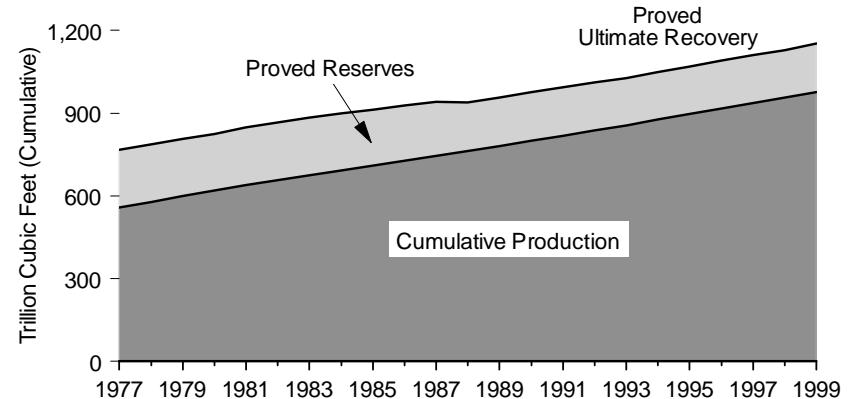
Cumulative Production and Proved Reserves, Indexed, 1977-1999



Crude Oil, 1977-1999



Natural Gas, 1977-1999



<sup>1</sup> There is a discontinuity in this time series between 1997 and 1998 due to the absence of updates for a subset of the data used in the past.

Notes: • Data are at end of year. • Crude oil includes lease condensate. • Natural gas is wet, after lease separation.

Source: Table 4.2.

**Table 4.2 Crude Oil and Natural Gas Field Counts, Cumulative Production, Proved Reserves, and Ultimate Recovery, 1977-1999**

Year	Cumulative Number of Fields with Crude Oil and/or Natural Gas	Cumulative Number of Fields with Crude Oil	Crude Oil and Lease Condensate (billion barrels)			Cumulative Number of Fields with Natural Gas	Natural Gas <sup>1</sup> (trillion cubic feet)		
			Cumulative Production	Proved Reserves	Proved Ultimate Recovery		Cumulative Production	Proved Reserves	Proved Ultimate Recovery
1977	31,360	27,835	121.4	33.6	155.0	23,883	558.3	209.5	767.8
1978	32,430	28,683	124.6	33.1	157.6	24,786	578.4	210.1	788.5
1979	33,644	29,671	127.7	31.2	158.9	25,823	599.1	208.3	807.4
1980	34,999	30,766	130.8	31.3	162.2	26,919	619.4	206.3	825.6
1981	36,621	32,111	133.9	31.0	165.0	28,213	639.4	209.4	848.9
1982	38,123	33,375	137.1	29.5	166.6	29,375	658.1	209.3	867.4
1983	39,489	34,495	140.3	29.3	169.6	30,419	675.1	209.0	884.1
1984	41,038	35,784	143.5	30.0	173.5	31,595	693.5	206.0	899.5
1985	42,317	36,849	146.8	29.9	176.7	32,595	710.9	202.2	913.1
1986	43,076	37,464	150.0	28.3	178.3	33,151	727.8	201.1	928.9
1987	43,742	37,982	153.0	28.7	181.7	33,657	745.4	196.4	941.8
1988	44,414	38,506	156.0	28.2	184.2	34,196	763.4	177.0	940.4
1989	44,883	38,858	158.8	27.9	186.7	34,579	781.7	175.4	957.1
1990	45,385	39,244	161.5	27.6	189.0	34,975	800.4	177.6	978.0
1991	45,776	39,558	164.2	25.9	190.1	35,254	819.1	175.3	994.4
1992	46,149	39,843	166.8	25.0	191.8	35,539	838.0	173.3	1,011.3
1993	46,513	40,124	169.3	24.1	193.4	35,798	857.2	170.5	1,027.7
1994	46,922	40,417	171.7	23.6	195.3	36,142	877.1	171.9	1,049.1
1995	47,296	40,694	174.1	23.5	197.7	36,433	896.9	173.5	1,070.4
1996	47,557	40,875	176.5	23.3	199.8	36,612	917.0	175.1	1,092.1
1997	47,854	40,977	178.9	23.9	202.8	36,830	937.1	175.7	1,112.8
1998	<sup>2</sup> 47,664	<sup>2</sup> 35,143	181.2	R22.4	R203.5	<sup>2</sup> 32,458	957.0	R172.4	R <sup>1</sup> 129.4
1999	NA	NA	183.3	23.2	206.5	NA	976.8	176.2	1,153.0

<sup>1</sup> Wet, after lease separation.

<sup>2</sup> There is a discontinuity in this time series between 1997 and 1998 due to the absence of updates for a subset of the data used in the past.

Note: Data are at end of year.

Web Page: [http://www.eia.doe.gov/oil\\_gas/natural\\_gas/nat\\_frame.html](http://www.eia.doe.gov/oil_gas/natural_gas/nat_frame.html).

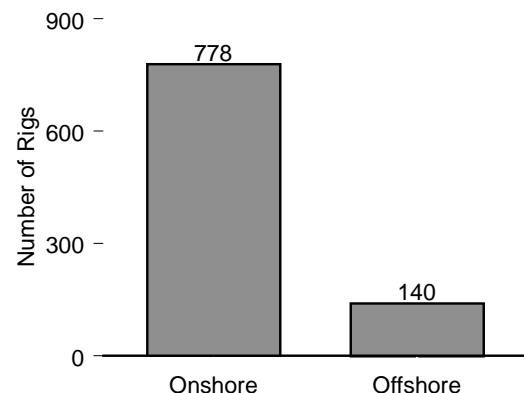
Sources: **Cumulative Production:** Calculated from Energy Information Administration (EIA), Petroleum

Supply Annual, annual reports and Natural Gas Annual, annual reports. **Proved Reserves:**

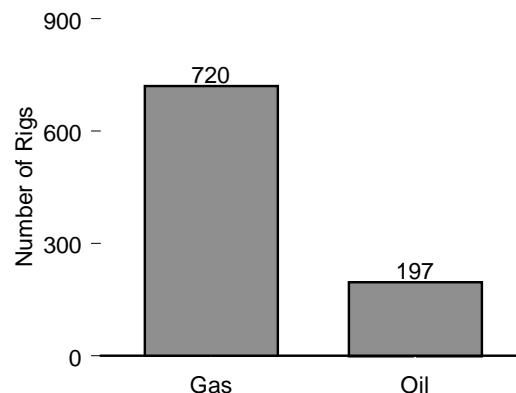
- 1977-1998—EIA, U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves, annual reports.
- 1999—EIA, U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves (December 2000), Tables 6, 9, and 16. **Field Counts:** EIA, Oil and Gas Field Code Master List, annual reports, and EIA, Office of Oil and Gas, Oil and Gas Integrated Field File.

**Figure 4.3 Oil and Gas Drilling Activity Measurements**

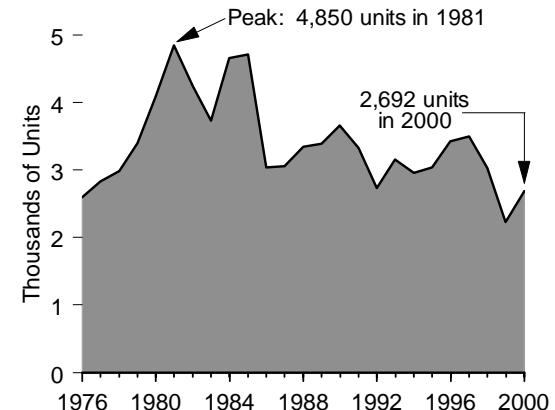
**Rotary Rigs in Operation by Site, 2000**



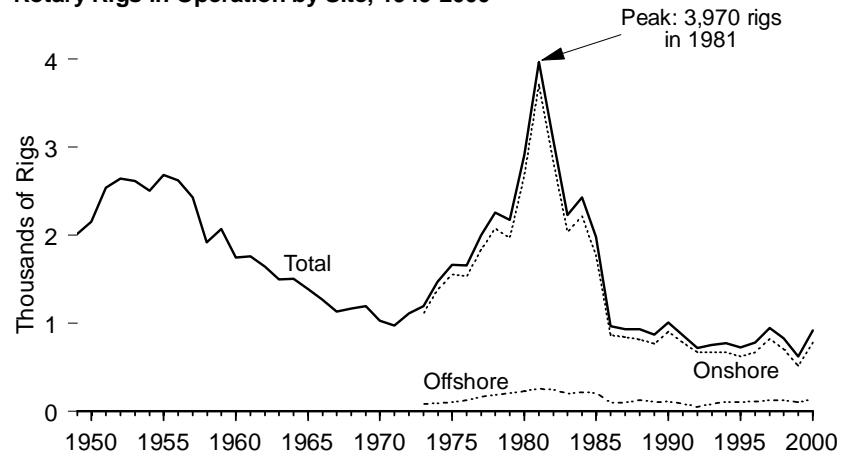
**Rotary Rigs in Operation by Type, 2000**



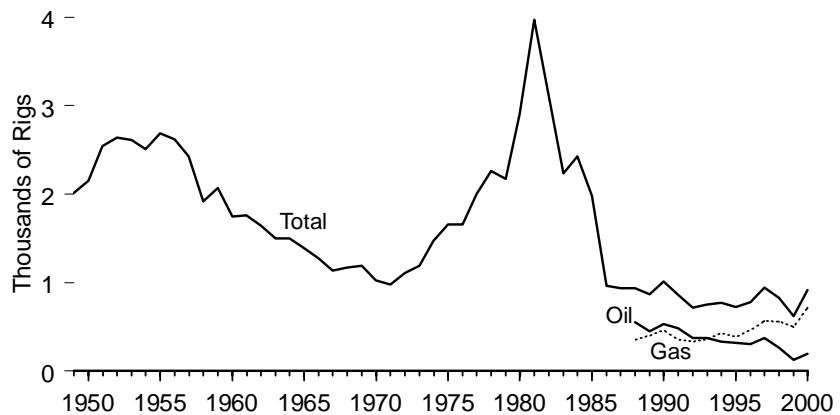
**Active Well Servicing Units, 1976-2000**



**Rotary Rigs in Operation by Site, 1949-2000**



**Rotary Rigs in Operation by Type, 1949-2000**



Source: Table 4.3.

**Table 4.3 Oil and Gas Drilling Activity Measurements, 1949-2000**

Year	Rotary Rigs in Operation <sup>1</sup>					Active Well Servicing Units	
	By Site		By Type		Total <sup>2</sup>		
	Offshore	Onshore	Oil	Gas			
1949	NA	NA	NA	NA	2,017	NA	
1950	NA	NA	NA	NA	2,154	NA	
1951	NA	NA	NA	NA	2,543	NA	
1952	NA	NA	NA	NA	2,641	NA	
1953	NA	NA	NA	NA	2,613	NA	
1954	NA	NA	NA	NA	2,508	NA	
1955	NA	NA	NA	NA	2,686	NA	
1956	NA	NA	NA	NA	2,620	NA	
1957	NA	NA	NA	NA	2,426	NA	
1958	NA	NA	NA	NA	1,922	NA	
1959	NA	NA	NA	NA	2,071	NA	
1960	NA	NA	NA	NA	1,748	NA	
1961	NA	NA	NA	NA	1,761	NA	
1962	NA	NA	NA	NA	1,641	NA	
1963	NA	NA	NA	NA	1,499	NA	
1964	NA	NA	NA	NA	1,501	NA	
1965	NA	NA	NA	NA	1,388	NA	
1966	NA	NA	NA	NA	1,272	NA	
1967	NA	NA	NA	NA	1,135	NA	
1968	NA	NA	NA	NA	1,169	NA	
1969	NA	NA	NA	NA	1,194	NA	
1970	NA	NA	NA	NA	1,028	NA	
1971	NA	NA	NA	NA	976	NA	
1972	NA	NA	NA	NA	1,107	NA	
1973	84	1,110	NA	NA	1,194	NA	
1974	94	1,378	NA	NA	1,472	NA	
1975	106	1,554	NA	NA	1,660	NA	
1976	129	1,529	NA	NA	1,658	2,601	
1977	167	1,834	NA	NA	2,001	2,828	
1978	185	2,074	NA	NA	2,259	2,988	
1979	207	1,970	NA	NA	2,177	3,399	
1980	231	2,678	NA	NA	2,909	4,089	
1981	256	3,714	NA	NA	3,970	4,850	
1982	243	2,862	NA	NA	3,105	4,248	
1983	199	2,033	NA	NA	2,232	3,732	
1984	213	2,215	NA	NA	2,428	4,663	
1985	206	1,774	NA	NA	1,980	4,716	
1986	99	865	NA	NA	964	3,036	
1987	95	841	NA	NA	936	3,060	
1988	123	813	554	354	936	3,341	
1989	105	764	453	401	869	3,391	
1990	108	902	532	464	1,010	3,658	
1991	81	779	482	351	860	3,331	
1992	52	669	373	331	721	2,732	
1993	82	672	373	364	754	3,158	
1994	102	673	335	427	775	2,961	
1995	101	622	323	385	723	3,043	
1996	108	671	306	464	779	3,425	
1997	122	821	376	564	943	3,499	
1998	123	703	264	560	827	3,030	
1999	106	519	128	496	625	2,230	
2000	140	778	197	720	918	2,692	

<sup>1</sup> Data are not for the exact calendar year but are an average for the 52 or 53 consecutive whole weeks that most nearly coincide with the calendar year.

<sup>2</sup> Sum of oil, gas, and miscellaneous other rigs (not shown).

NA=Not available.

Notes: • Geographic coverage is the 50 States and the District of Columbia. • Totals may not equal

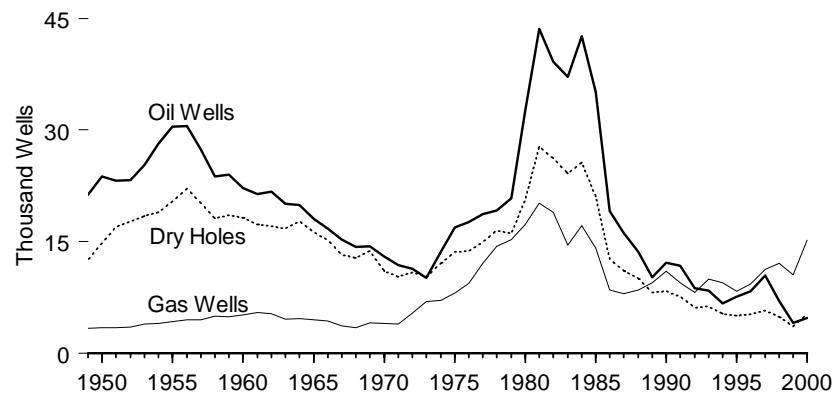
sum of components due to independent rounding.

Sources: **Rotary Rigs in Operation:** Baker Hughes, Inc., Houston, Texas, *Rotary Rigs Running—By State*. **Active Well Servicing Units:** • 1976-July 1998—Association of Energy Service Companies, Dallas, Texas, *Field Reports*. • August 1998 forward—Guiberson Well Service Products, a Halliburton company, Carrollton, Texas.

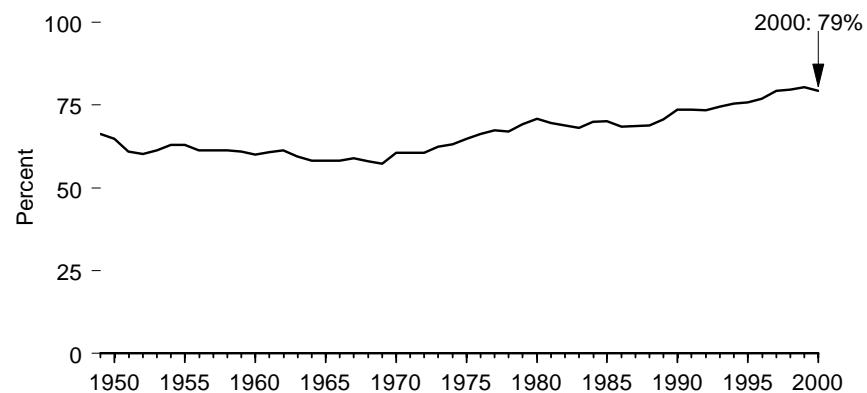
**Figure 4.4 Oil and Gas Exploratory and Development Wells, 1949-2000**

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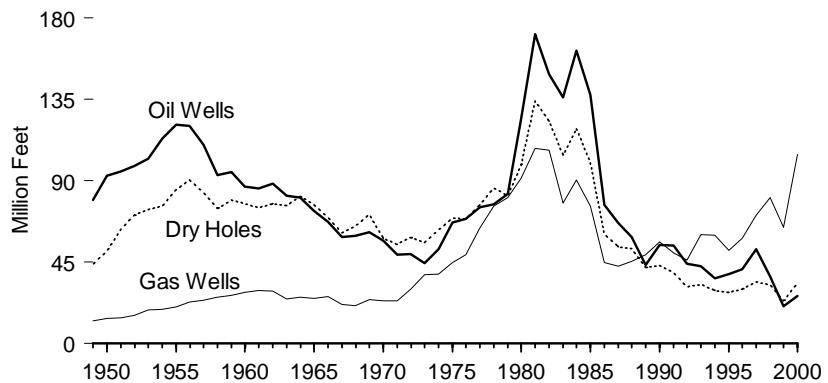
**Wells Drilled**



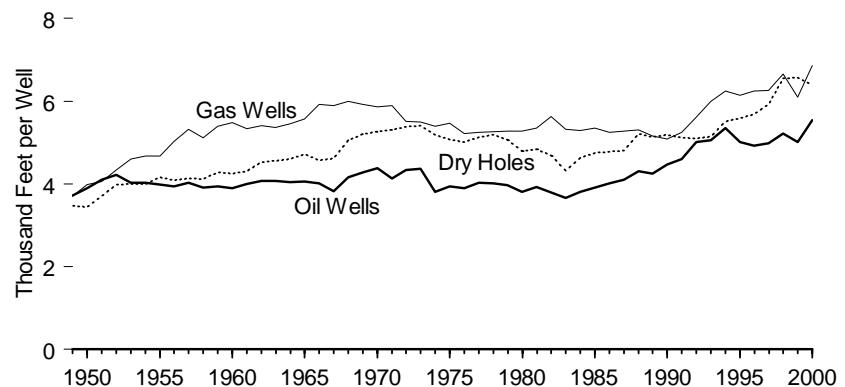
**Successful Wells**



**Footage Drilled**



**Average Depth**



Note: This figure depicts all wells; see Figure 4.5 for exploratory wells and Figure 4.6 for development wells.

Source: Table 4.4.

**Table 4.4 Oil and Gas Exploratory and Development Wells, 1949-2000**

Year	Wells Drilled (thousands)				Successful Wells (percent)	Footage Drilled (million feet)				Average Depth (feet per well)			
	Oil	Gas	Dry Holes	Total		Oil	Gas	Dry Holes	Total	Oil	Gas	Dry Holes	Total
1949	21.35	3.36	12.60	37.31	66.2	79.4	12.4	43.8	135.6	3,720	3,698	3,473	3,635
1950	23.81	3.44	14.80	42.05	64.8	92.7	13.7	51.0	157.4	3,893	3,979	3,445	3,742
1951	23.18	3.44	17.03	43.64	61.0	95.1	13.9	63.1	172.1	4,103	4,056	3,706	3,944
1952	23.29	3.51	17.76	44.56	60.1	98.1	15.3	70.7	184.1	4,214	4,342	3,983	4,132
1953	25.32	3.97	18.45	47.74	61.4	102.1	18.2	73.9	194.2	4,033	4,599	4,004	4,069
1954	28.14	4.04	18.93	51.11	63.0	113.4	18.9	75.8	208.0	4,028	4,670	4,004	4,070
1955	30.43	4.27	20.45	55.15	62.9	121.1	19.9	85.1	226.2	3,981	4,672	4,161	4,101
1956	30.53	4.53	22.11	57.17	61.3	120.4	22.7	90.2	233.3	3,942	5,018	4,079	4,080
1957	27.36	4.48	20.16	52.00	61.2	110.0	23.8	83.2	217.0	4,021	5,326	4,126	4,174
1958	23.77	5.01	18.16	46.94	61.3	93.1	25.6	74.6	193.3	3,916	5,106	4,110	4,118
1959	24.04	4.93	18.59	47.56	60.9	94.6	26.6	79.5	200.7	3,935	5,396	4,275	4,220
1960	22.26	5.15	18.21	45.62	60.1	86.6	28.2	77.4	192.2	3,889	5,486	4,248	4,213
1961	21.44	5.49	17.33	44.25	60.8	85.6	29.3	74.7	189.6	3,994	5,339	4,311	4,285
1962	21.73	5.35	17.08	44.16	61.3	88.4	28.9	77.3	194.6	4,070	5,408	4,524	4,408
1963	20.14	4.57	16.76	41.47	59.6	81.8	24.5	76.3	182.6	4,063	5,368	4,552	4,405
1964	19.91	4.69	17.69	42.29	58.2	80.5	25.6	81.4	187.4	4,042	5,453	4,598	4,431
1965	18.07	4.48	16.23	38.77	58.2	73.3	24.9	76.6	174.9	4,059	5,562	4,723	4,510
1966	16.78	4.38	15.23	36.38	58.1	67.3	25.9	69.6	162.9	4,013	5,928	4,573	4,478
1967	15.33	3.66	13.25	32.23	58.9	58.6	21.6	61.1	141.4	3,825	5,898	4,616	4,385
1968	14.33	3.46	12.81	30.60	58.1	59.5	20.7	64.7	145.0	4,153	5,994	5,053	4,738
1969	14.37	4.08	13.74	32.19	57.3	61.6	24.2	71.4	157.1	4,286	5,918	5,195	4,881
1970	12.97	4.01	11.03	28.01	60.6	56.9	23.6	58.1	138.6	4,385	5,860	5,265	4,943
1971	11.85	3.97	10.31	26.13	60.6	49.1	23.5	54.7	127.3	4,126	5,890	5,305	4,858
1972	11.38	5.44	10.89	27.71	60.7	49.3	30.0	58.6	137.8	4,330	5,516	5,377	4,974
1973	10.17	6.93	10.32	27.42	62.4	44.4	38.0	55.8	138.2	4,369	5,488	5,403	5,041
1974	13.65	7.14	12.12	32.90	63.2	52.0	38.4	62.9	153.4	3,812	5,387	5,191	4,662
1975	16.95	8.13	13.65	38.72	64.8	66.8	R44.5	R69.2	180.5	R3,943	R5,470	R5,073	4,661
1976	17.69	9.41	13.76	40.86	66.3	R68.9	49.1	69.0	187.0	R3,895	R5,220	R5,014	4,577
1977	18.75	12.12	14.99	45.85	67.3	R63.7	R76.7	215.9	4,025	R5,254	R5,120	R4,708	
1978	19.18	14.41	16.55	50.15	67.0	77.0	75.8	85.8	238.7	4,016	R5,262	R5,183	4,760
1979	20.85	15.25	16.10	52.20	69.2	R82.7	80.5	R81.6	244.8	R3,966	5,275	R5,071	4,689
1980	32.64	17.33	20.64	70.61	70.8	124.3	91.5	98.9	314.7	R3,809	5,278	R4,790	4,456
1981	43.60	20.17	27.79	91.55	69.6	R171.2	107.8	R134.1	413.1	R3,926	5,346	R4,827	4,512
1982	39.20	18.98	26.22	84.40	68.9	148.8	106.7	122.8	378.3	R3,796	R5,622	R4,683	4,482
1983	37.12	14.56	24.15	75.84	68.2	136.1	77.6	104.3	318.0	3,667	5,325	4,320	4,193
1984	42.61	17.13	25.68	85.41	69.9	161.8	90.6	119.0	371.4	R3,798	5,289	R4,634	4,348
1985	35.12	14.17	21.06	70.34	70.1	R137.4	R75.9	R99.8	313.0	3,911	R5,354	R4,741	4,450
1986	19.10	8.52	12.68	40.29	68.5	76.6	44.7	60.5	181.9	4,013	R5,253	R4,771	4,514
1987	16.16	8.06	11.11	35.33	68.5	66.3	42.5	53.4	162.2	R4,103	R5,275	4,803	4,590
1988	13.64	8.56	10.04	32.23	68.8	58.7	45.3	52.3	156.4	4,305	5,298	5,211	4,851
1989	10.20	9.54	8.19	27.93	70.7	43.3	49.2	R42.0	134.4	R4,244	R5,156	R5,124	4,813
1990	12.20	11.04	8.31	31.56	73.7	R54.5	R56.1	43.1	153.7	R4,465	R5,083	R5,184	4,871
1991	11.77	9.53	7.60	28.89	73.7	R54.2	50.0	38.9	143.0	R4,601	R5,248	R5,118	4,950
1992	8.76	8.21	6.12	23.08	73.5	R43.9	R46.0	31.2	121.1	R5,015	R5,608	R5,094	5,247
1993	8.41	10.02	6.33	24.75	74.4	R42.5	R60.0	32.6	135.1	R5,055	R5,993	5,150	5,459
1994	6.72	9.54	5.31	21.57	75.4	36.0	59.6	29.2	124.8	R5,356	R6,247	R5,506	5,787
1995	7.63	8.35	5.08	21.06	75.9	38.2	R51.3	R28.3	117.8	R5,009	R6,139	R5,585	5,596
1996E	8.31	9.30	5.28	22.90	76.9	R40.9	R58.1	30.0	129.0	R4,918	R6,249	R5,685	5,636
1997E	10.44	11.33	5.70	27.47	79.2	R52.0	R70.8	R33.8	156.7	R4,986	R6,254	R5,924	5,704
1998E	7.06	12.11	4.91	24.08	79.6	R36.9	R80.6	R32.2	149.6	R5,217	R6,655	R6,557	6,213
1999E	R4.09	10.51	R3.58	R18.18	80.3	R20.5	R64.1	R23.5	R108.1	R5,012	R6,094	R6,565	R5,944
2000E	4.73	15.21	5.20	25.14	79.3	26.2	104.4	33.2	163.8	5,534	6,865	6,388	6,516

R=Revised. E=Estimate.

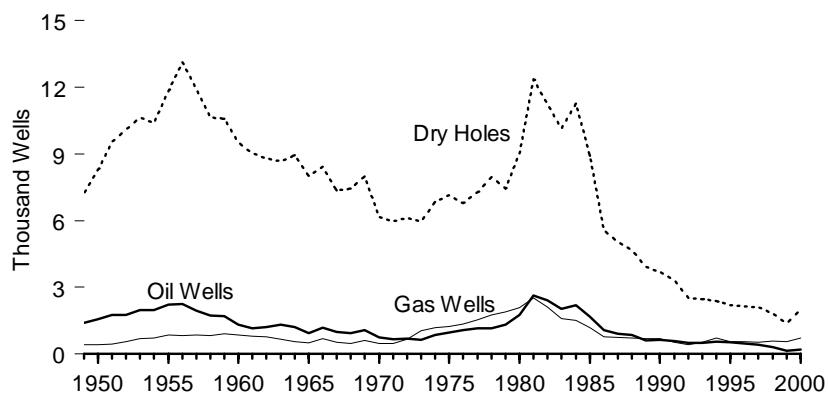
Notes: • This table depicts all wells; see Table 4.5 for exploratory wells and Table 4.6 for development wells. • Service wells, stratigraphic tests, and core tests are excluded. • For 1949-1959, data represent wells completed in a given year. For 1960-1969, data are for well completion reports received by the American Petroleum Institute during the reporting year. For 1970 forward, the data represent wells completed in a given year. See Note 2 at end of section. • Totals may not equal sum of components due to independent rounding. Average depth may not equal average of components due to independent

rounding.

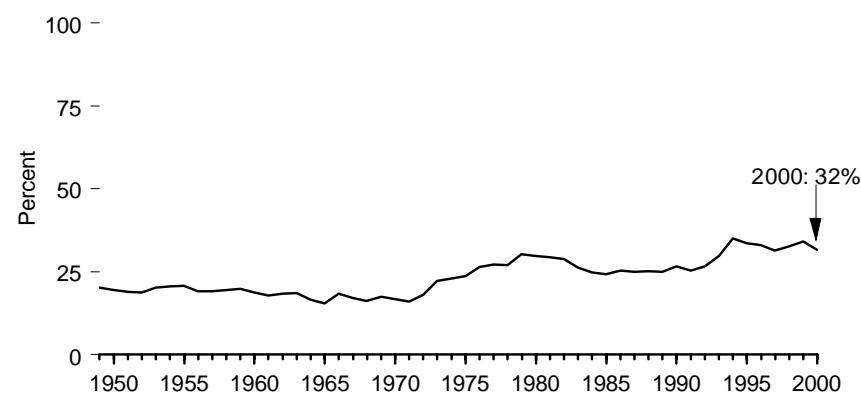
Sources: • 1949-1965—Gulf Publishing Company, *World Oil*, "Forecast-Review" issue. • 1966-1969—American Petroleum Institute, *Quarterly Review of Drilling Statistics for the United States*, annual summaries and monthly reports. • 1970-1994—Energy Information Administration (EIA) computations based on well reports submitted to the American Petroleum Institute. • 1995 forward—EIA computations based on well reports submitted to the Information Handling Services Energy Group, Inc. For current data see the EIA, *Monthly Energy Review*, Section 5.

**Figure 4.5 Oil and Gas Exploratory Wells, 1949-2000**

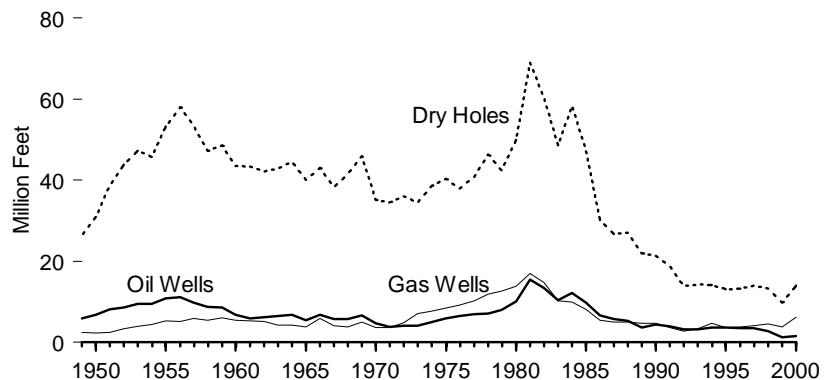
**Wells Drilled**



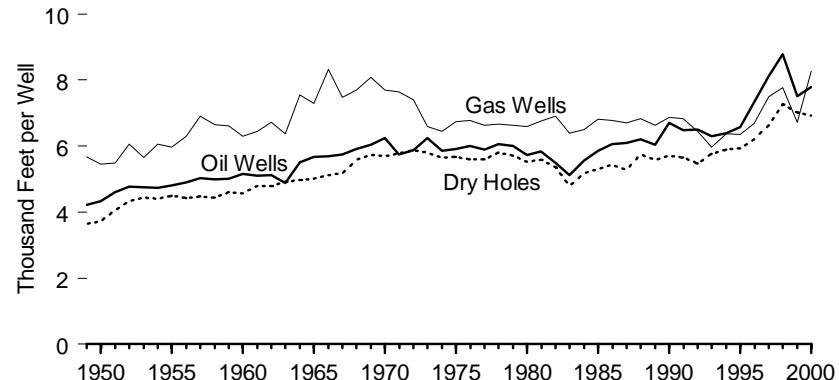
**Successful Wells**



**Footage Drilled**



**Average Depth**



Note: This figure depicts exploratory wells only; see Figure 4.4 for all wells and Figure 4.6 for development wells only.

Source: Table 4.5.

**Table 4.5 Oil and Gas Exploratory Wells, 1949-2000**

Year	Wells Drilled (thousands)				Successful Wells (percent)	Footage Drilled (million feet)				Average Depth (feet per well)			
	Oil	Gas	Dry Holes	Total		Oil	Gas	Dry Holes	Total	Oil	Gas	Dry Holes	Total
1949	1.41	0.42	7.23	9.06	20.2	6.0	2.4	26.4	34.8	4,232	5,682	3,658	3,842
1950	1.58	0.43	8.29	10.31	19.5	6.9	2.4	31.0	40.2	4,335	5,466	3,733	3,898
1951	1.76	0.45	9.54	11.76	18.9	8.1	2.5	38.7	49.3	4,609	5,497	4,059	4,197
1952	1.78	0.56	10.09	12.43	18.8	8.5	3.4	43.7	55.6	4,781	6,071	4,334	4,476
1953	1.98	0.70	10.63	13.31	20.1	9.4	4.0	47.3	60.7	4,761	5,654	4,447	4,557
1954	1.99	0.73	10.39	13.10	20.7	9.4	4.4	45.8	59.6	4,740	6,059	4,408	4,550
1955	2.24	0.87	11.83	14.94	20.8	10.8	5.2	53.2	69.2	4,819	5,964	4,498	4,632
1956	2.27	0.82	13.12	16.21	19.1	11.1	5.2	58.0	74.3	4,901	6,301	4,425	4,587
1957	1.95	0.87	11.90	14.71	19.1	9.8	6.0	53.4	69.2	5,036	6,898	4,488	4,702
1958	1.75	0.82	10.63	13.20	19.4	8.7	5.5	47.3	61.5	4,993	6,657	4,449	4,658
1959	1.70	0.91	10.58	13.19	19.8	8.5	6.0	48.7	63.3	5,021	6,613	4,602	4,795
1960	1.32	0.87	9.52	11.70	18.7	6.8	5.5	43.5	55.8	5,170	6,298	4,575	4,770
1961	1.16	0.81	9.02	10.99	17.9	5.9	5.2	43.3	54.4	5,099	6,457	4,799	4,953
1962	1.21	0.77	8.82	10.80	18.4	6.2	5.2	42.2	53.6	5,124	6,728	4,790	4,966
1963	1.31	0.66	8.69	10.66	18.5	6.4	4.2	42.8	53.5	4,878	6,370	4,933	5,016
1964	1.22	0.56	8.95	10.73	16.6	6.7	4.2	44.6	55.5	5,509	7,547	4,980	5,174
1965	0.95	0.52	8.01	9.47	15.4	5.4	3.8	40.1	49.2	5,672	7,295	5,007	5,198
1966	1.20	0.70	8.42	10.31	18.4	6.8	5.8	43.1	55.7	5,700	8,321	5,117	5,402
1967	0.99	0.53	7.36	8.88	17.1	5.7	4.0	38.2	47.8	5,758	7,478	5,188	5,388
1968	0.95	0.49	7.44	8.88	16.2	5.6	3.7	41.6	51.0	5,914	7,697	5,589	5,739
1969	1.08	0.62	8.00	9.70	17.5	6.6	5.0	45.9	57.5	6,054	8,092	5,739	5,924
1970	0.76	0.48	6.16	7.40	16.7	4.7	3.7	35.1	43.5	6,247	7,695	5,700	5,885
1971	0.66	0.47	5.95	7.08	15.9	3.8	3.6	34.5	41.9	5,745	7,649	5,796	5,915
1972	0.69	0.66	6.13	7.48	17.9	4.0	4.8	36.1	45.0	5,880	7,400	5,882	6,015
1973	0.64	1.07	5.95	7.66	22.3	4.0	7.0	34.6	45.6	R6,243	R6,596	R5,808	R5,955
1974	0.86	1.19	6.83	8.88	23.1	5.0	7.7	38.6	51.3	R5,855	R6,456	R5,649	R5,777
1975	0.98	1.25	7.13	9.36	23.8	5.8	8.4	R40.4	54.7	R5,913	R6,748	R5,674	R5,842
1976	1.09	1.35	6.77	9.20	26.4	6.5	9.1	38.0	53.6	R6,010	R6,777	R5,607	R5,825
1977	1.16	1.55	7.28	10.00	27.1	6.9	R10.3	R40.8	57.9	R5,902	R6,625	R5,605	R5,798
1978	1.17	1.77	7.97	10.91	27.0	7.1	11.8	46.3	65.2	R6,067	R6,662	R5,813	R5,978
1979	1.32	1.91	7.44	10.67	30.3	7.9	12.6	R42.5	63.1	R6,011	R6,630	R5,716	R5,916
1980	1.76	2.08	9.04	12.88	29.8	10.1	13.7	R50.0	73.9	R5,727	R6,605	R5,533	R5,733
1981	2.64	2.51	12.35	17.50	29.4	15.4	17.0	68.9	101.4	R5,851	R6,763	R5,582	R5,792
1982	2.43	2.13	11.25	15.80	28.8	13.4	14.7	60.3	R88.3	R5,496	R6,914	R5,358	R5,588
1983	2.02	1.59	10.15	13.76	26.3	10.4	10.2	48.6	69.2	R5,131	6,400	R4,788	R5,025
1984	2.20	1.52	11.28	15.00	24.8	12.2	9.9	58.4	80.5	R5,570	R6,499	R5,176	R5,368
1985	1.68	1.19	8.92	11.79	24.3	9.9	8.1	47.4	65.4	R5,867	R6,824	R5,315	R5,546
1986	1.08	0.79	5.55	7.43	25.3	6.6	5.4	30.1	42.1	R6,067	R6,778	5,431	R5,668
1987	0.93	0.75	5.05	6.73	25.0	5.6	5.1	26.7	37.4	R6,101	R6,709	R5,289	R5,560
1988	0.86	0.73	4.69	6.28	25.3	5.3	5.0	27.0	37.3	R6,200	R6,830	R5,751	R5,938
1989	0.61	0.71	3.92	5.24	25.1	3.7	4.7	21.9	R30.3	R6,052	R6,639	R5,580	R5,778
1990	0.65	0.69	3.72	5.06	26.6	4.4	4.7	21.3	30.4	R6,701	R6,868	R5,721	R6,004
1991	0.59	0.53	3.31	4.44	25.4	3.8	3.6	R18.7	26.2	R6,481	R6,834	R5,656	R5,908
1992	0.49	0.42	2.51	3.43	26.7	3.2	2.7	13.8	R19.7	R6,508	R6,461	R5,477	R5,747
1993	0.50	0.55	2.47	3.52	29.8	3.2	3.3	R14.2	20.7	R6,306	R5,968	R5,765	R5,874
1994	0.57	0.73	2.41	3.70	35.0	3.6	4.6	14.2	22.4	R6,386	R6,377	R5,894	R6,065
1995	0.54	0.57	2.20	3.31	33.6	3.6	3.6	13.0	R20.2	R6,587	R6,352	R5,937	R6,115
1996 <sup>E</sup>	0.48	0.57	2.14	3.19	33.0	3.5	3.8	R13.3	R20.6	R7,334	R6,694	R6,211	R6,467
1997 <sup>E</sup>	0.43	0.54	2.11	3.07	31.4	R3.5	4.0	R14.0	R21.5	R8,117	R7,497	R6,630	R6,988
1998 <sup>E</sup>	0.30	0.58	1.82	2.70	32.7	2.7	4.5	R13.2	R20.4	R8,789	R7,771	R7,279	R7,554
1999 <sup>E</sup>	R0.16	R0.57	1.39	R2.11	R34.1	R1.2	R3.8	R9.7	R14.7	R7,521	R6,725	R7,019	R6,977
2000 <sup>E</sup>	0.19	0.74	2.02	2.95	31.6	1.5	6.1	14.0	21.6	7,797	8,264	6,937	7,326

R=Revised. E=Estimate.

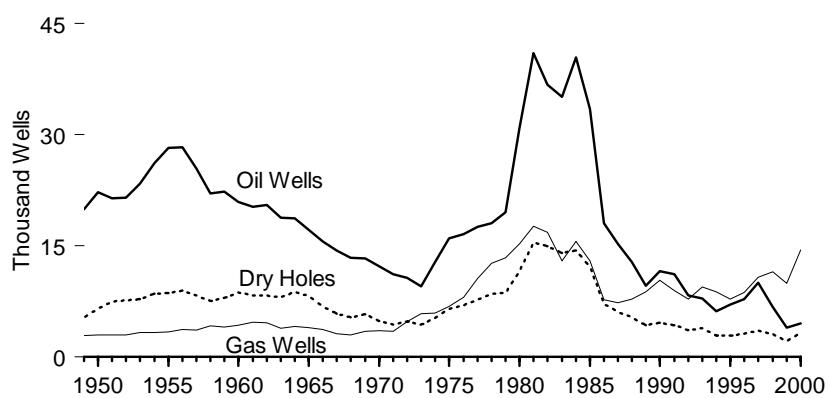
Notes: • This table depicts exploratory wells only; see Table 4.4 for all wells and Table 4.6 for development wells only. • For 1949-1959, data represent wells completed in a given year. For 1960-1969, data are for well completion reports received by the American Petroleum Institute during the reporting year. For 1970 forward, the data represent wells completed in a given year. See Note 2 at end of section. • Totals may not equal sum of components due to independent rounding. Average depth may not equal average of components due to independent rounding.

Sources: • 1949-1960—American Association of Petroleum Geologists, *Statistics on Exploratory Drilling*

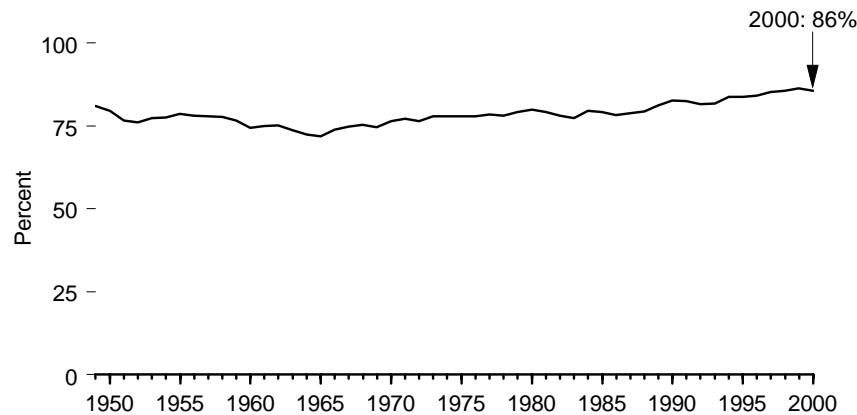
in the United States, 1940 through 1960 (1962), pp. 4-19. • 1961-1965—*Bulletin of the American Association of Petroleum Geologists*, "North American Developments" issue. • 1966-1969—American Petroleum Institute, *Quarterly Review of Drilling Statistics for the United States*, annual summaries and monthly reports. • 1970-1994—Energy Information Administration (EIA) computations based on well reports submitted to the American Petroleum Institute. • 1995 forward—EIA computations based on well reports submitted to the Information Handling Services Energy Group, Inc. For current data see the EIA *Monthly Energy Review*, Section 5.

**Figure 4.6 Oil and Gas Development Wells, 1949-2000**

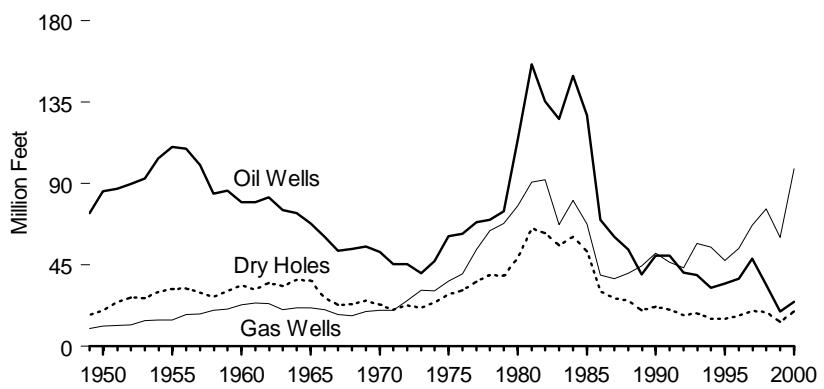
**Wells Drilled**



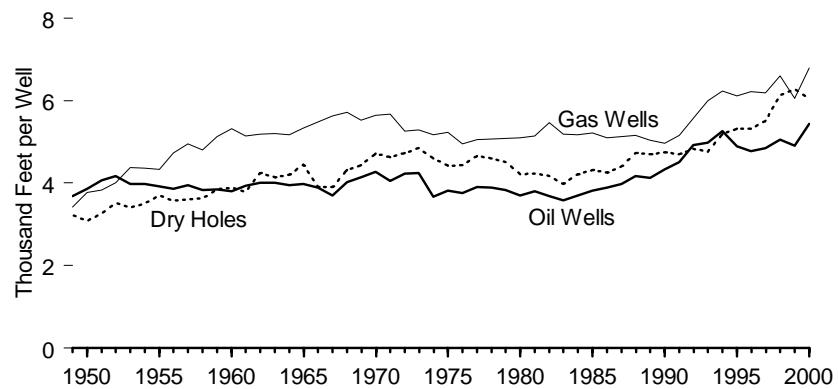
**Successful Wells**



**Footage Drilled**



**Average Depth**



Note: These figures depict developed wells only; see Figure 4.4 for all wells and Figure 4.5 for exploratory wells only.

Source: Table 4.6.

**Table 4.6 Oil and Gas Development Wells, 1949-2000**

Year	Wells Drilled (thousands)				Successful Wells (percent)	Footage Drilled (million feet)				Average Depth (feet per well)			
	Oil	Gas	Dry Holes	Total		Oil	Gas	Dry Holes	Total	Oil	Gas	Dry Holes	Total
1949	19.95	2.94	5.37	28.25	81.0	73.5	10.0	17.3	100.8	3,684	3,412	3,225	3,568
1950	22.23	3.01	6.51	31.74	79.5	85.8	11.3	20.0	117.2	3,861	3,766	3,077	3,691
1951	21.42	2.98	7.49	31.89	76.5	87.0	11.5	24.4	122.8	4,061	3,837	3,255	3,851
1952	21.51	2.96	7.67	32.14	76.1	89.7	11.9	27.0	128.5	4,167	4,015	3,520	3,999
1953	23.34	3.27	7.82	34.43	77.3	92.7	14.3	26.6	133.6	3,972	4,373	3,401	3,880
1954	26.16	3.31	8.54	38.01	77.5	104.0	14.5	30.0	148.4	3,974	4,365	3,512	3,905
1955	28.20	3.39	8.62	40.21	78.6	110.4	14.7	31.9	157.0	3,915	4,339	3,699	3,904
1956	28.26	3.71	8.99	40.96	78.0	109.2	17.6	32.1	158.9	3,865	4,734	3,574	3,880
1957	25.42	3.61	8.25	37.28	77.9	100.2	17.9	29.7	147.9	3,944	4,950	3,605	3,966
1958	22.03	4.18	7.53	33.74	77.7	84.4	20.1	27.3	131.8	3,831	4,801	3,631	3,907
1959	22.34	4.02	8.01	34.37	76.7	86.1	20.6	30.8	137.4	3,852	5,120	3,844	3,999
1960	20.94	4.28	8.70	33.92	74.4	79.7	22.8	33.8	136.3	3,809	5,321	3,889	4,020
1961	20.28	4.67	8.31	33.26	75.0	79.7	24.0	31.4	135.2	3,931	5,145	3,782	4,064
1962	20.52	4.58	8.26	33.36	75.2	82.2	23.8	35.0	141.0	4,008	5,186	4,239	4,227
1963	18.82	3.91	8.08	30.80	73.8	75.4	20.3	33.5	129.2	4,006	5,198	4,143	4,193
1964	18.69	4.14	8.74	31.57	72.3	73.7	21.4	36.8	131.9	3,947	5,171	4,207	4,179
1965	17.12	3.97	8.22	29.31	71.9	68.0	21.2	36.5	125.7	3,970	5,337	4,446	4,288
1966	15.58	3.68	6.81	26.07	73.9	60.5	20.1	26.6	107.2	3,884	5,474	3,900	4,112
1967	14.34	3.13	5.89	23.36	74.8	53.0	17.6	23.0	93.5	3,692	5,629	3,901	4,004
1968	13.38	2.97	5.37	21.72	75.3	53.9	17.0	23.2	94.0	4,027	5,716	4,311	4,328
1969	13.28	3.47	5.74	22.49	74.5	55.0	19.2	25.4	99.6	4,142	5,531	4,437	4,431
1970	12.21	3.53	4.87	20.61	76.4	52.1	19.9	23.0	95.0	4,269	5,644	4,714	4,610
1971	11.19	3.50	4.36	19.05	77.1	45.3	19.8	20.2	85.4	4,049	5,670	4,633	4,480
1972	10.69	4.78	4.76	20.23	76.5	45.2	25.2	22.5	92.9	4,231	5,259	4,725	4,590
1973	9.53	5.87	4.37	19.76	77.9	40.4	31.0	21.2	92.6	R4,242	R5,286	R4,851	R4,687
1974	12.79	5.95	5.28	24.02	78.0	47.0	30.8	24.3	R102.1	R3,675	R5,173	R4,599	R4,249
1975	15.97	6.88	6.52	29.36	77.8	61.0	36.0	28.8	125.8	R3,821	R5,238	R4,415	R4,285
1976	16.60	8.06	6.99	31.65	77.9	62.4	40.0	31.0	R133.4	R3,756	4,960	R4,439	R4,214
1977	17.58	10.57	7.70	35.86	78.5	68.6	53.4	35.9	157.9	R3,901	R5,053	R4,662	R4,404
1978	18.01	12.64	8.59	39.24	78.1	69.9	64.0	39.5	173.5	R3,883	R5,066	R4,600	R4,421
1979	19.53	13.35	8.66	41.54	79.1	74.7	67.8	R39.1	181.7	R3,827	R5,082	R4,517	R4,374
1980	30.88	15.25	11.60	57.73	79.9	114.2	77.7	48.8	240.8	R3,699	R5,097	4,211	4,171
1981	40.96	17.65	15.44	74.05	79.2	155.7	90.8	65.2	311.8	3,802	5,145	4,224	4,210
1982	36.77	16.85	14.97	68.59	78.2	135.5	92.0	62.5	R290.0	R3,684	R5,459	R4,176	R4,228
1983	35.10	12.97	14.01	62.07	77.4	125.7	67.4	55.7	248.8	3,582	5,193	3,980	R4,009
1984	40.41	15.61	14.40	70.42	79.5	149.6	80.7	60.6	290.9	3,701	5,171	R4,209	4,131
1985	33.44	12.98	12.13	58.55	79.3	127.5	67.7	52.4	247.6	3,813	R5,219	4,320	R4,230
1986	18.01	7.72	7.13	32.87	78.3	70.1	39.4	30.3	139.8	3,889	R5,096	R4,257	4,253
1987	15.24	7.30	6.06	28.60	78.8	60.7	37.4	26.7	124.8	R3,982	R5,127	R4,398	4,362
1988	12.78	7.82	5.35	25.95	79.4	53.4	40.3	25.3	119.1	R4,178	5,155	R4,737	4,588
1989	9.60	8.83	4.26	22.70	81.2	39.6	44.5	20.1	104.2	R4,129	R5,037	R4,704	4,591
1990	11.54	10.36	4.60	26.50	82.6	50.1	R51.4	21.8	123.3	R4,339	R4,965	R4,750	R4,655
1991	11.18	8.99	4.28	24.45	82.5	50.3	R46.3	20.1	116.8	R4,501	R5,154	R4,702	R4,776
1992	8.26	7.79	3.61	19.66	81.7	40.7	R43.3	17.4	101.4	R4,926	R5,562	R4,827	R5,160
1993	7.91	9.47	3.86	21.23	81.8	39.3	56.8	R18.4	114.4	R4,976	R5,995	R4,756	R5,390
1994	6.15	8.81	2.90	17.87	83.8	32.4	55.0	15.0	102.4	R5,261	R6,237	R5,185	R5,730
1995	7.09	7.78	2.88	17.75	83.8	34.6	R47.7	R15.3	R97.6	R4,888	R6,124	R5,316	R5,499
1996E	7.83	8.73	3.15	19.71	84.0	37.3	R54.3	R16.8	R108.4	R4,769	R6,220	R5,328	R5,501
1997E	10.01	10.79	3.59	24.39	85.3	48.6	R66.8	R19.8	R135.2	R4,852	R6,193	R5,510	R5,542
1998E	6.76	11.53	3.10	21.39	85.5	34.2	R76.1	R19.0	R129.2	R5,057	R6,599	R6,133	R6,044
1999E	R3.93	R9.95	R2.19	R16.07	R86.4	19.3	R60.3	R13.8	R93.3	R4,913	R6,058	R6,278	R5,808
2000E	4.54	14.47	3.19	22.19	85.6	24.7	98.3	19.2	142.2	5,439	6,793	6,041	6,408

R=Revised. E=Estimate.

Notes: • This table depicts development wells only; see Table 4.4 for all wells and Table 4.5 for exploratory wells only. • Service wells, stratigraphic tests, and core tests are excluded. • For 1949-1959, data represent wells completed in a given year. For 1960-1969, data are for well completion reports received by the American Petroleum Institute during the reporting year. For 1970 forward, the data represent wells completed in a given year. See Note 2 at end of section. • Totals may not equal sum of components due to independent rounding. Average depth may not equal average of components due to

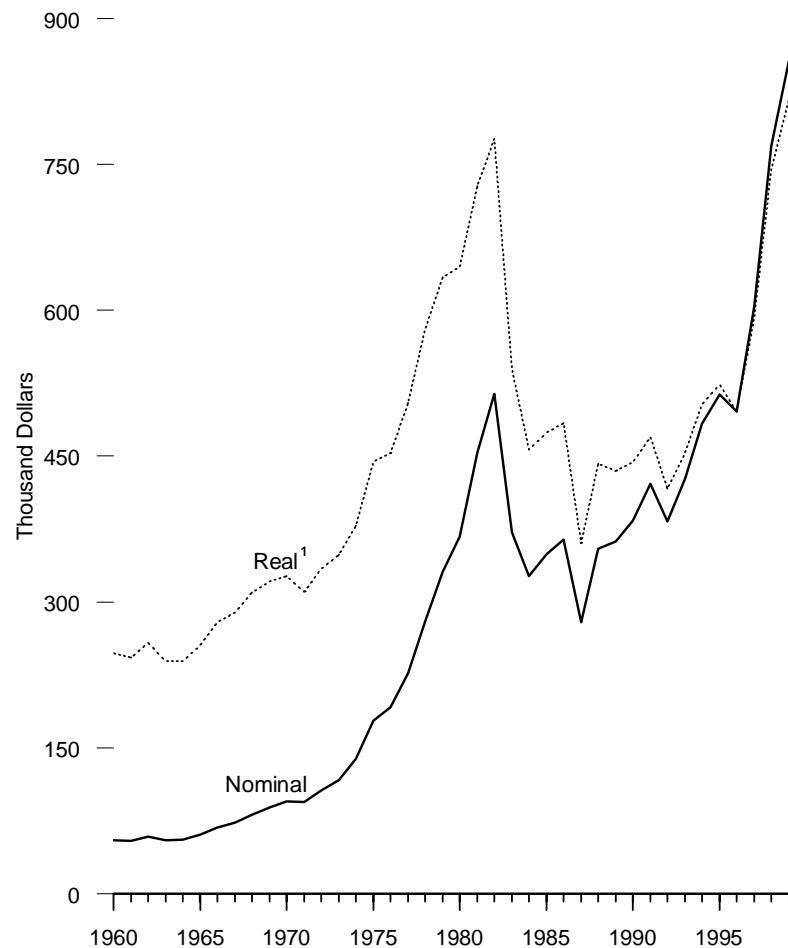
independent rounding.

Sources: • 1949-1965—Gulf Publishing Company, *World Oil*, "Forecast-Review" issue. • 1966-1969—American Petroleum Institute, *Quarterly Review of Drilling Statistics for the United States*, annual summaries and monthly reports. • 1970-1994—Energy Information Administration (EIA) computations based on well reports submitted to the American Petroleum Institute. • 1995 forward—EIA computations based on well reports submitted to the Information Handling Services Energy Group, Inc. For current data see the EIA *Monthly Energy Review*, Section 5.

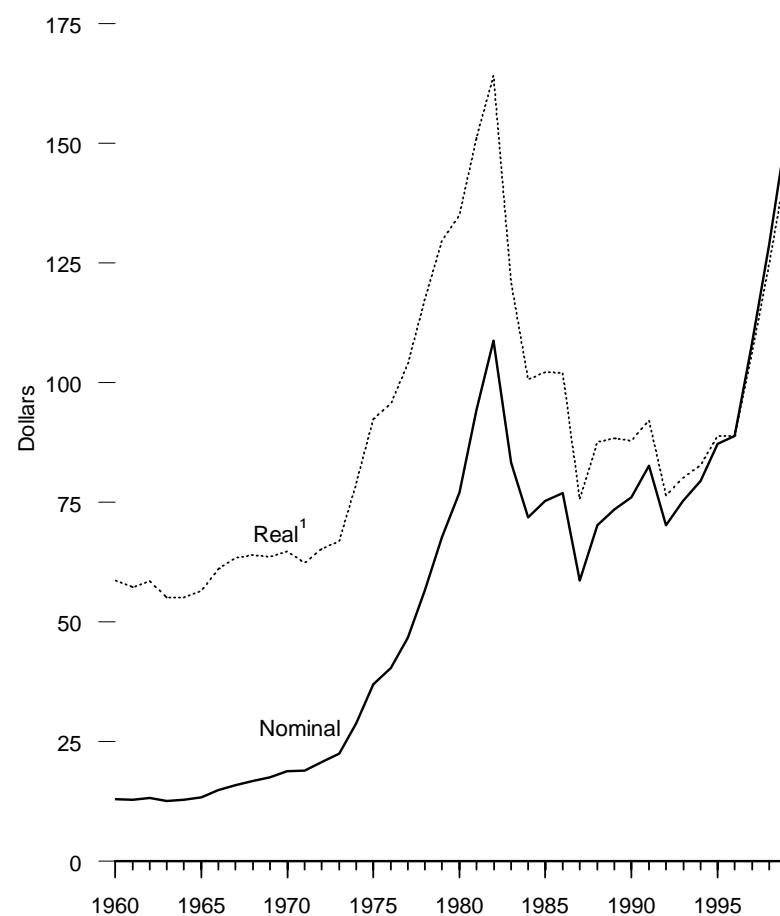
**Figure 4.7 Costs of Oil and Gas Wells Drilled, 1960-1999**

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**Costs per Well, All Wells**



**Costs per Foot, All Wells**



<sup>1</sup>In chained (1996) dollars, calculated by using gross domestic product implicit price deflators. See Table E1.

Note: Because vertical scales differ, graphs should not be compared.  
Source: Table 4.7.

**Table 4.7 Costs of Oil and Gas Wells Drilled, 1960-1999**

Year	Costs per Well (thousand dollars)					Costs per Foot (dollars)				
	Oil (nominal)	Gas (nominal)	Dry Holes (nominal)	All		Oil (nominal)	Gas (nominal)	Dry Holes (nominal)	All	
				(nominal)	(real) <sup>1</sup>				(nominal)	(real) <sup>1</sup>
1960	52.2	102.7	44.0	54.9	247.6	13.22	18.57	10.56	13.01	58.63
1961	51.3	94.7	45.2	54.5	243.0	13.11	17.65	10.56	12.85	57.26
1962	54.2	97.1	50.8	58.6	257.9	13.41	18.10	11.20	13.31	58.53
1963	51.8	92.4	48.2	55.0	239.2	13.20	17.19	10.58	12.69	55.17
1964	50.6	104.8	48.5	55.8	239.2	13.12	18.57	10.64	12.86	55.10
1965	56.6	101.9	53.1	60.6	255.0	13.94	18.35	11.21	13.44	56.52
1966	62.2	133.8	56.9	68.4	279.6	15.04	21.75	12.34	14.95	61.12
1967	66.6	141.0	61.5	72.9	289.2	16.61	23.05	12.87	15.97	63.35
1968	79.1	148.5	66.2	81.5	309.7	18.63	24.05	12.88	16.83	63.99
1969	86.5	154.3	70.2	88.6	321.0	19.28	25.58	13.23	17.56	63.65
1970	86.7	160.7	80.9	94.9	326.5	19.29	26.75	15.21	18.84	64.83
1971	78.4	166.6	86.8	94.7	310.3	18.41	27.70	16.02	19.03	62.35
1972	93.5	157.8	94.9	106.4	334.5	20.77	27.78	17.28	20.76	65.24
1973	103.8	155.3	105.8	117.2	348.7	22.54	27.46	19.22	22.50	66.96
1974	110.2	189.2	141.7	138.7	378.8	27.82	34.11	26.76	28.93	79.00
1975	138.6	262.0	177.2	177.8	444.1	34.17	46.23	33.86	36.99	92.41
1976	151.1	270.4	190.3	191.6	453.0	37.35	49.78	36.94	40.46	95.65
1977	170.0	313.5	230.2	227.2	504.6	41.16	57.57	43.49	46.81	103.98
1978	208.0	374.2	281.7	280.0	580.4	49.72	68.37	52.55	56.63	117.42
1979	243.1	443.1	339.6	331.4	634.2	58.29	80.66	64.60	67.70	129.57
1980	272.1	536.4	376.5	367.7	644.6	66.36	95.16	73.70	77.02	135.03
1981	336.3	698.6	464.0	453.7	727.4	80.40	122.17	90.03	94.30	151.19
1982	347.4	864.3	515.4	514.4	776.4	86.34	146.20	104.09	108.73	164.12
1983	283.8	608.1	366.5	371.7	539.7	72.65	108.37	79.10	83.34	120.99
1984	262.1	489.8	329.2	326.5	457.0	66.32	88.80	67.18	71.90	100.64
1985	270.4	508.7	372.3	349.4	474.1	66.78	93.09	73.69	75.35	102.25
1986	284.9	522.9	389.2	364.6	484.1	68.35	93.02	76.53	76.88	102.08
1987	246.0	380.4	259.1	279.6	360.4	58.35	69.55	51.05	58.71	75.68
1988	279.4	460.3	366.4	354.7	442.2	62.28	84.65	66.96	70.23	87.56
1989	282.3	457.8	355.4	362.2	435.0	64.92	86.86	67.61	73.55	88.33
1990	321.8	471.3	367.5	383.6	443.4	69.17	90.73	67.49	76.07	87.93
1991	346.9	506.6	441.2	421.5	470.1	73.75	93.10	83.05	82.64	92.17
1992	362.3	426.1	357.6	382.6	416.6	69.50	72.83	67.82	70.27	76.51
1993	356.6	521.2	387.7	426.8	453.8	67.52	83.15	72.56	75.30	80.06
1994	409.5	535.1	491.5	483.2	503.3	70.57	81.90	86.60	79.49	82.79
1995	415.8	629.7	481.2	513.4	523.4	78.09	95.97	84.60	87.22	88.91
1996	341.0	616.0	541.0	496.1	496.1	70.60	98.67	95.74	88.92	88.92
1997	445.6	728.6	655.6	603.9	R592.4	90.48	117.55	115.09	107.83	R105.77
1998	566.0	815.6	973.2	769.1	R745.1	108.88	127.94	157.79	128.97	R124.95
1999	783.0	798.4	1115.5	856.1	817.2	156.45	138.42	182.99	152.02	145.10

<sup>1</sup> In chained (1996) dollars, calculated by using gross domestic product implicit price deflators. See Table E1.

R=Revised.

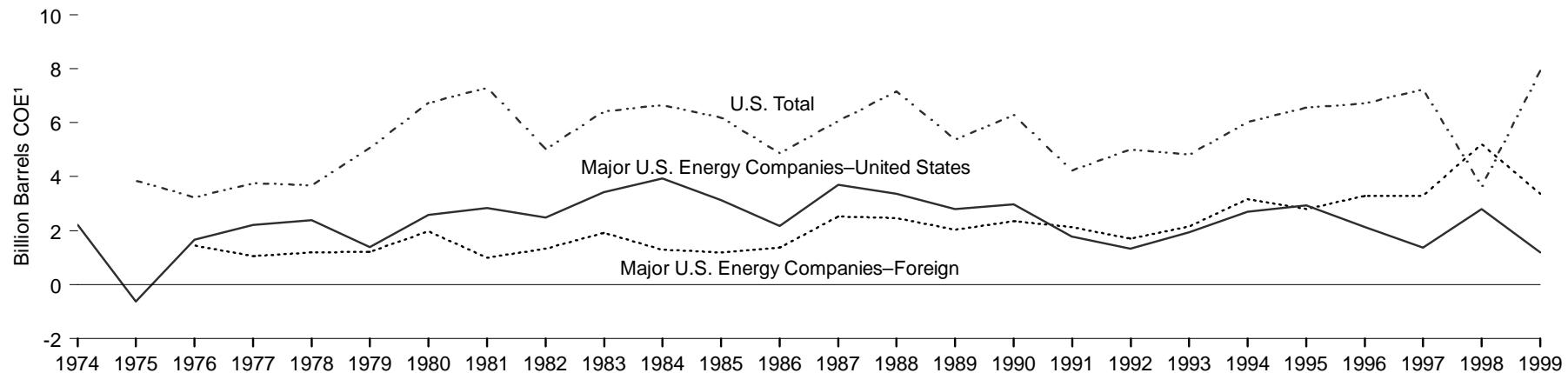
Notes: • The information reported for 1965 and prior years is not strictly comparable to that in the more recent surveys. • Average cost is the arithmetic mean and includes all costs for drilling and equipping

wells and for surface-producing facilities. Wells drilled include exploratory and development wells; excludes service wells, stratigraphic tests, and core tests.

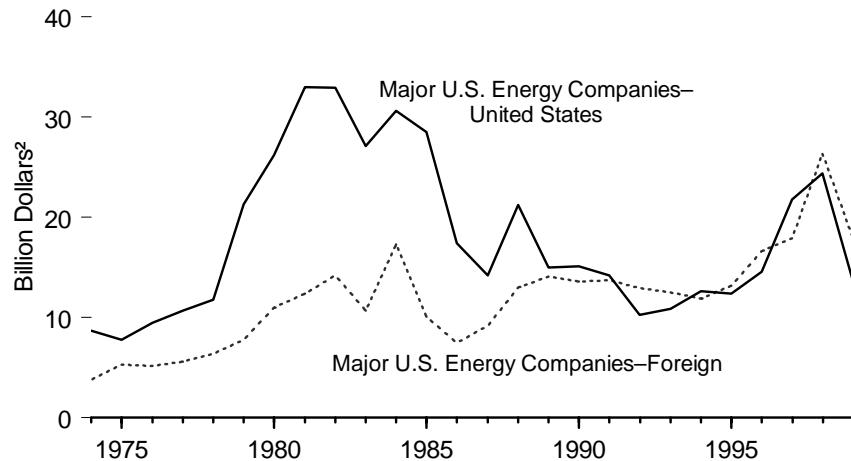
Source: American Petroleum Institute, Independent Petroleum Association of America, Mid-Continent Oil and Gas Association, 2000 Joint Association Survey on Drilling Costs.

**Figure 4.8 Gross Additions to Proved Reserves and Exploration and Development Expenditures by Geographic Area**

**Gross Additions to Proved Reserves of Liquid and Gaseous Hydrocarbons, 1974-1999**



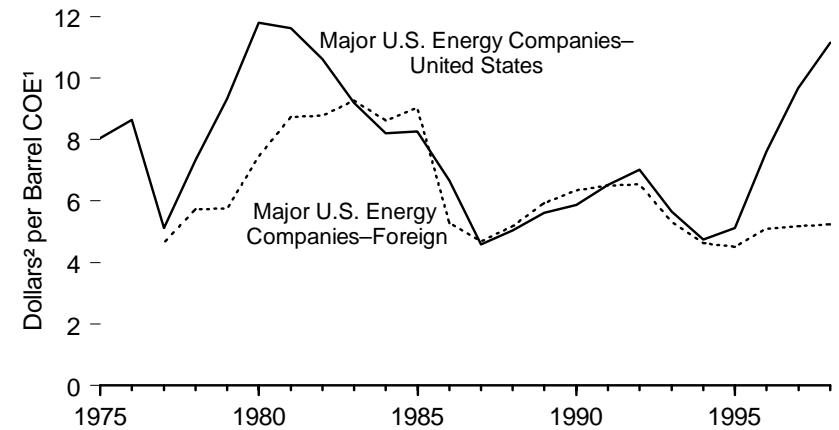
**Exploration and Development Expenditures, 1974-1999**



<sup>1</sup> Crude oil equivalent.

<sup>2</sup> Nominal dollars.

**Expenditures per Barrel of Reserve Additions, 1975-1998  
Three-Year Moving Average**



Note: Major U.S. Energy Companies are the top publicly-owned crude oil and natural gas producers and petroleum refiners that form the Financial Reporting System (FRS). See Table 3.12.

Source: Table 4.8.

**Table 4.8 Gross Additions to Proved Reserves and Exploration and Development Expenditures by Geographic Area, 1974-1999**

Year	Gross Additions to Proved Reserves <sup>1</sup> of Liquid and Gaseous Hydrocarbons <sup>2</sup> (million barrels COE <sup>3</sup> )			Exploration and Development Expenditures (billion dollars <sup>4</sup> )		Expenditures per Barrel of Reserve Additions, Three-Year Moving Average (dollars <sup>4</sup> per barrel COE <sup>3</sup> )	
	U.S. Total	Major U.S. Energy Companies <sup>5</sup>		Major U.S. Energy Companies <sup>5</sup>		Major U.S. Energy Companies <sup>5</sup>	
		United States	Foreign	United States	Foreign	United States	Foreign
1974	NA	2,205	NA	8.7	3.8	NA	NA
1975	3,846	-634	NA	7.8	5.3	8.05	NA
1976	3,224	1,663	1,459	9.5	5.2	8.64	NA
1977	3,765	2,210	1,055	10.7	5.6	5.12	4.64
1978	3,679	2,383	1,191	11.8	6.4	7.34	5.73
1979	5,071	1,378	<sup>6</sup> 1,208	21.3	7.8	9.34	<sup>6</sup> 5.75
1980	6,723	2,590	1,977	26.2	11.0	11.80	7.45
1981	7,304	2,848	1,006	33.0	12.4	11.63	8.74
1982	5,030	2,482	1,332	32.9	14.2	<sup>7</sup> 10.62	<sup>7</sup> 8.78
1983	6,412	3,427	1,918	27.1	10.7	9.20	9.28
1984	6,653	3,941	1,298	30.6	17.3	<sup>7</sup> 8.21	<sup>7</sup> 8.63
1985	6,190	<sup>8</sup> 3,129	1,192	28.5	10.1	<sup>8</sup> 8.27	9.03
1986	4,866	2,178	<sup>6</sup> 1,375	17.4	7.5	6.67	<sup>6</sup> 5.28
1987	6,059	<sup>8</sup> 3,698	2,516	14.2	9.2	<sup>8</sup> 4.58	4.69
1988	7,156	3,359	2,460	21.2	13.0	5.05	5.18
1989	5,385	2,798	2,043	15.0	14.1	5.62	5.94
1990	6,275	2,979	2,355	15.1	13.6	5.87	6.34
1991	4,227	1,772	2,135	14.2	13.7	6.52	6.50
1992	5,006	1,332	1,694	10.3	12.9	7.02	6.55
1993	4,814	1,945	2,147	10.9	12.5	5.66	5.33
1994	6,021	2,703	3,173	12.6	11.9	4.74	4.63
1995	6,558	2,929	2,799	12.4	13.2	5.11	4.51
1996	6,707	2,131	3,280	14.6	16.6	7.61	5.10
1997	7,233	1,367	3,279	21.8	17.9	9.67	5.18
1998	3,628	<sup>R</sup> 2,798	5,206	24.4	26.4	<sup>R</sup> 11.15	<sup>R</sup> 5.24
1999	7,929	1,197	3,360	13.5	17.8	NA	NA

<sup>1</sup> Gross additions to proved reserves equal annual change in proved reserves plus annual production.

<sup>2</sup> Liquid and gaseous hydrocarbons include crude oil, natural gas liquids, and natural gas.

<sup>3</sup> Crude oil equivalent: converted to Btu on the basis of annual average conversion factors. See Appendix A.

<sup>4</sup> Nominal dollars.

<sup>5</sup> Major U.S. Energy Companies are the top publicly-owned, U.S.-based crude oil and natural gas producers and petroleum refiners that form the Financial Reporting System (FRS) (see Table 3.12).

<sup>6</sup> Data for 1979 exclude downward revisions of 1,225 million barrels COE due to Iranian policies. Data for 1986 exclude downward revisions due to Libyan sanctions.

<sup>7</sup> Data for 1982 and 1984 are adjusted to exclude purchases of proved reserves associated with mergers among the Financial Reporting System companies.

<sup>8</sup> Data for 1985 and 1987 exclude downward revisions of 1,477 million barrels COE and 2,396 million

barrels COE, respectively, of Alaska North Slope natural gas reserves.

R=Revised. NA=Not available.

Web Page: <http://www.eia.doe.gov/emeu/finance>.

Sources: **Major U.S. Energy Companies:** • 1974-1976—Energy Information Administration (EIA), Form EIA-28, "Financial Reporting System" database, November 1997. • 1977 forward—EIA,

*Performance Profiles of Major Energy Producers*, annual reports. **U.S. Total, Gross Additions to Proved Reserves of Liquid and Gaseous Hydrocarbons:** • 1975-1979—American Gas Association, American

Petroleum Institute, and Canadian Petroleum Association (published jointly), *Reserves of Crude Oil, Natural*

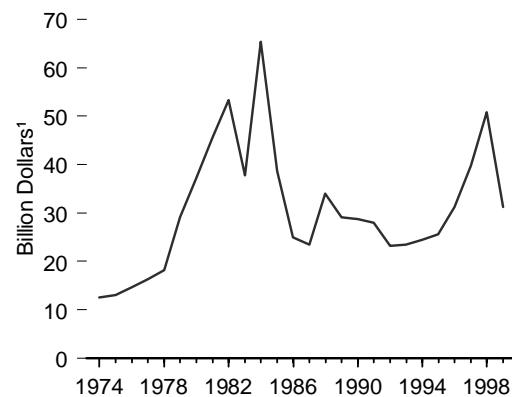
*Gas Liquids, and Natural Gas in the United States and Canada as of December 31, 1979*, Volume 34, June

1980. • 1980 forward—EIA, *U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves*, annual reports.

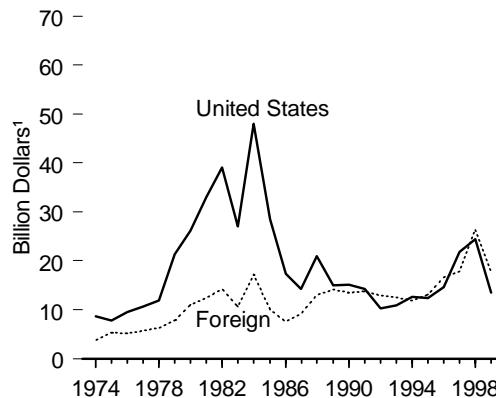
**Figure 4.9 Major U.S. Energy Companies' Expenditures for Oil and Gas Exploration and Development by Region**

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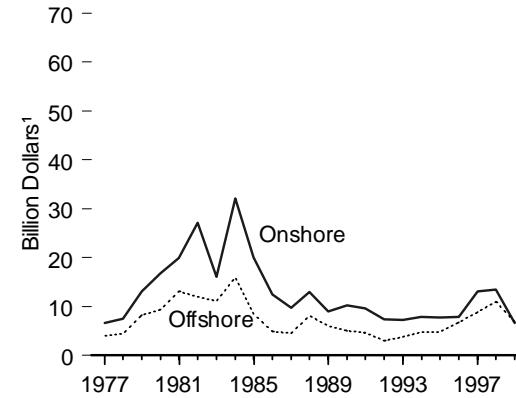
**Total, 1974-1999**



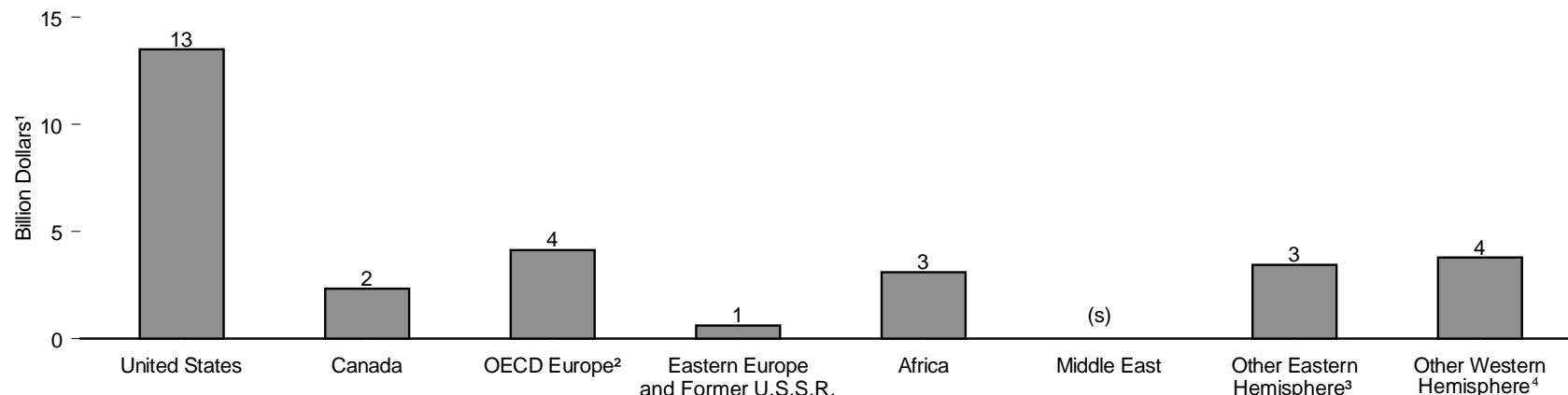
**U.S. and Foreign, 1974-1999**



**U.S. Onshore and Offshore, 1977-1999**



**By Region, 1999**



<sup>1</sup> Nominal dollars.

<sup>2</sup> Organization for Economic Cooperation and Development. See OECD Europe in Glossary.

<sup>3</sup> This region includes areas that are eastward of the Greenwich prime meridian to 180° longitude and that are not included in other specific domestic or foreign classifications.

<sup>4</sup> This region includes areas that are westward of the Greenwich prime meridian to 180° longitude and that are not included in other specific domestic or foreign classifications.

(s) = Less than 0.5 billion dollars.

Notes: • Major U.S. Energy Companies are the top publicly-owned crude oil producers that form the Financial Reporting System (FRS). See Table 3.12. • Because vertical scales differ, graphs should not be compared.

Source: Table 4.9.

**Table 4.9 Major U.S. Energy Companies' Expenditures for Oil and Gas Exploration and Development by Region, 1974-1999**  
(Billion Dollars<sup>1</sup>)

Year	United States			Foreign								Total
	Onshore	Offshore	Total	Canada	OECD <sup>2</sup> Europe	Eastern Europe and Former U.S.S.R.	Africa	Middle East	Other Eastern Hemisphere <sup>3</sup>	Other Western Hemisphere <sup>4</sup>	Total	
1974	NA	NA	8.7	NA	NA	—	NA	NA	NA	NA	3.8	12.5
1975	NA	NA	7.8	NA	NA	—	NA	NA	NA	NA	5.3	13.1
1976	NA	NA	9.5	NA	NA	—	NA	NA	NA	NA	5.2	14.7
1977	6.7	4.0	10.7	1.5	2.5	—	0.7	0.2	0.3	0.4	5.6	16.3
1978	7.5	4.3	11.8	1.6	2.6	—	0.8	0.3	0.4	0.6	6.4	18.2
1979	13.0	8.3	21.3	2.3	3.0	—	0.8	0.2	0.5	0.8	7.8	29.1
1980	16.8	9.4	26.2	3.1	4.3	—	1.4	0.2	0.8	1.0	11.0	37.2
1981	19.9	13.0	33.0	1.8	5.0	—	2.1	0.3	1.9	1.3	12.4	45.4
1982	27.2	11.9	39.1	1.9	6.3	—	2.1	0.4	2.4	1.1	14.2	53.3
1983	16.0	11.1	27.1	1.6	4.3	—	1.7	0.5	2.0	0.6	10.7	37.7
1984	32.1	16.0	48.1	5.4	5.5	—	3.4	0.5	2.0	0.5	17.3	65.3
1985	20.0	8.5	28.5	1.9	3.7	—	1.6	0.9	1.3	0.7	10.1	38.6
1986	12.5	4.9	17.4	1.1	3.2	—	1.1	0.3	1.2	0.6	7.5	24.9
1987	9.7	4.5	14.3	1.9	3.0	—	0.8	0.4	2.8	0.5	9.2	23.5
1988	12.9	8.1	21.0	5.4	4.3	—	0.8	0.4	1.4	0.7	13.0	34.1
1989	9.0	6.0	15.0	6.3	3.5	—	1.0	0.4	2.3	0.6	14.1	29.1
1990	10.2	4.9	15.1	1.8	6.6	—	1.4	0.6	2.4	0.7	13.6	28.7
1991	9.6	4.6	14.2	1.7	6.8	—	1.5	0.5	2.4	0.7	13.7	27.9
1992	7.3	3.0	10.3	1.1	6.8	—	1.4	0.6	2.4	0.6	12.9	23.2
1993	7.2	3.7	10.9	1.6	5.5	0.3	1.5	0.7	2.5	0.6	12.5	23.5
1994	7.8	4.8	12.6	1.8	4.4	0.3	1.4	0.4	2.8	0.7	11.9	24.5
1995	7.7	4.7	12.4	1.9	5.2	0.4	2.0	0.4	2.4	0.9	13.2	25.6
1996	7.9	6.7	14.6	1.6	5.6	0.5	2.8	0.5	4.1	1.6	16.6	31.3
1997	13.0	8.8	21.8	2.0	7.1	0.6	3.0	0.6	3.0	1.6	17.9	39.8
1998	13.5	11.0	24.4	4.8	8.6	1.3	3.1	0.9	3.9	3.7	26.4	50.8
1999	6.6	6.9	13.5	2.3	4.1	0.6	3.1	0.4	3.4	3.8	17.8	31.3

<sup>1</sup> Nominal dollars.

<sup>2</sup> Organization for Economic Cooperation and Development. See OECD Europe in Glossary.

<sup>3</sup> This region includes areas that are eastward of the Greenwich prime meridian to 180° longitude and that are not included in other domestic or foreign classifications.

<sup>4</sup> This region includes areas that are westward of the Greenwich prime meridian to 180° longitude and that are not included in other domestic or foreign classifications.

— = Not applicable. NA=Not available.

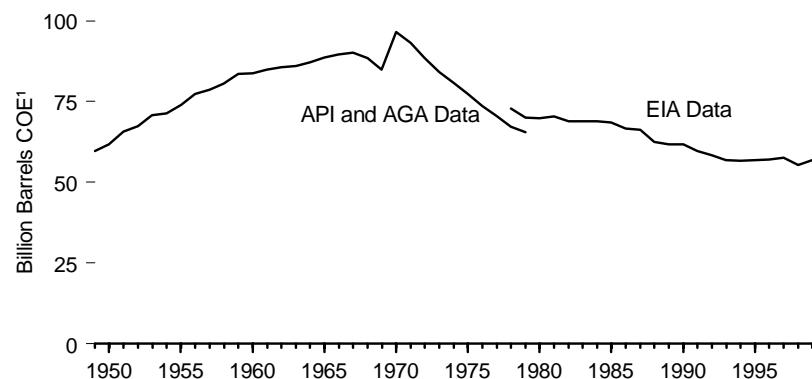
Notes: • Major U.S. Energy Companies are the top publicly-owned, U.S.-based crude oil and natural gas producers and petroleum refiners that form the Financial Reporting System (FRS). See Table 3.12.  
• Totals may not equal sum of components due to independent rounding.

Web Page: <http://www.eia.doe.gov/emeu/finance>.

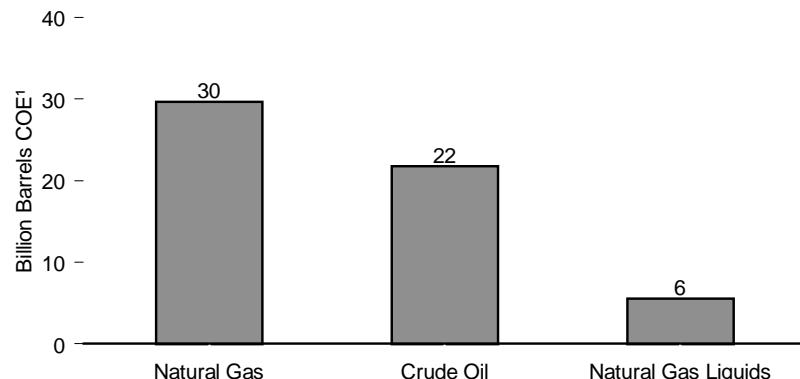
Sources: • 1974-1976—Energy Information Administration (EIA), Office of Energy Markets and End Use, Financial Reporting System Database, November 1997. • 1977 forward—EIA, *Performance Profiles of Major Energy Producers*, annual reports.

**Figure 4.10 Liquid and Gaseous Hydrocarbon Proved Reserves**

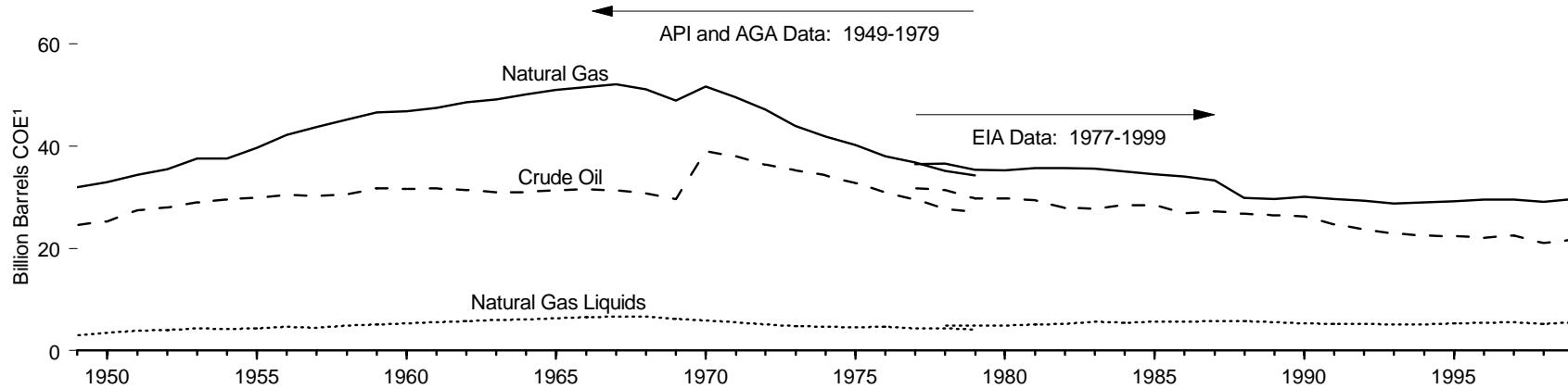
**Total, 1949-1999**



**By Type, 1999**



**By Type, 1949-1999**



<sup>1</sup> COE=crude oil equivalent.

Notes: • Data are at end of year. • API=American Petroleum Institute.  
AGA=American Gas Association. • EIA=Energy Information Administration.

• Because vertical scales differ, graphs should not be compared.

Source: Table 4.10.

**Table 4.10 Liquid and Gaseous Hydrocarbon Proved Reserves, 1949-1999**

Year	Crude Oil		Natural Gas		Natural Gas Liquids		Total
	Billion Barrels	Trillion Cubic Feet <sup>1</sup>	Billion Barrels COE <sup>2</sup>	Billion Barrels	Billion Barrels COE <sup>2</sup>	Billion Barrels COE <sup>2</sup>	Billion Barrels COE <sup>2</sup>
American Petroleum Institute and American Gas Association Data							
1949	24.6	179.4	32.0	3.7	3.1	3.1	59.7
1950	25.3	184.6	32.9	4.3	3.5	3.5	61.7
1951	27.5	192.8	34.4	4.7	3.9	3.9	65.7
1952	28.0	198.6	35.4	5.0	4.1	4.1	67.5
1953	28.9	210.3	37.5	5.4	4.4	4.4	70.9
1954	29.6	210.6	37.6	5.2	4.2	4.2	71.3
1955	30.0	222.5	39.7	5.4	4.4	4.4	74.1
1956	30.4	236.5	42.2	5.9	4.7	4.7	77.3
1957	30.3	245.2	43.8	5.7	4.5	4.5	78.6
1958	30.5	252.8	45.1	6.2	5.0	5.0	80.6
1959	31.7	261.2	46.6	6.5	5.2	5.2	83.5
1960	31.6	262.3	46.8	6.8	5.4	5.4	83.8
1961	31.8	266.3	47.5	7.0	5.6	5.6	84.8
1962	31.4	272.3	48.6	7.3	5.8	5.8	85.7
1963	31.0	276.2	49.1	7.7	6.0	6.0	86.1
1964	31.0	281.3	50.0	7.7	6.1	6.1	87.1
1965	31.4	286.5	51.0	8.0	6.3	6.3	88.6
1966	31.5	289.3	51.5	8.3	6.5	6.5	89.5
1967	31.4	292.9	52.1	8.6	6.7	6.7	90.2
1968	30.7	287.3	51.1	8.6	6.7	6.7	88.5
1969	29.6	275.1	48.9	8.1	6.3	6.3	84.8
1970	39.0	290.7	51.7	7.7	5.9	5.9	96.6
1971	38.1	278.8	49.6	7.3	5.5	5.5	93.2
1972	36.3	266.1	47.1	6.8	5.1	5.1	88.5
1973	35.3	250.0	44.0	6.5	4.8	4.8	84.1
1974	34.2	237.1	41.9	6.4	4.7	4.7	80.8
1975	32.7	228.2	40.2	6.3	4.6	4.6	77.5
1976	30.9	216.0	38.0	6.4	4.7	4.7	73.6
1977	29.5	208.9	36.8	6.0	4.4	4.4	70.6
1978	27.8	200.3	35.2	5.9	4.3	4.3	67.3
1979	27.1	194.9	34.3	5.7	4.1	4.1	65.5
Energy Information Administration Data							
1977	31.8	207.4	36.5	NA	NA	NA	NA
1978	31.4	208.0	36.5	6.8	4.9	4.9	72.8
1979	29.8	201.0	35.4	6.6	4.8	4.8	70.0
1980	29.8	199.0	35.2	6.7	4.9	4.9	69.9
1981	29.4	201.7	35.7	7.1	5.2	5.2	70.3
1982	27.9	201.5	35.7	7.2	5.2	5.2	68.8
1983	27.7	200.2	35.6	7.9	5.7	5.7	69.0
1984	28.4	197.5	35.1	7.6	5.5	5.5	69.0
1985	28.4	193.4	34.4	7.9	5.6	5.6	68.5
1986	26.9	191.6	34.0	8.2	5.7	5.7	66.6
1987	27.3	187.2	33.3	8.1	5.8	5.8	66.3
1988	26.8	168.0	29.8	8.2	5.8	5.8	62.5
1989	26.5	167.1	29.7	7.8	5.5	5.5	61.7
1990	26.3	169.3	30.1	7.6	5.4	5.4	61.7
1991	24.7	167.1	29.7	7.5	5.3	5.3	59.6
1992	23.7	165.0	29.3	7.5	5.2	5.2	58.3
1993	23.0	162.4	28.8	7.2	5.1	5.1	56.8
1994	22.5	163.8	29.0	7.2	5.1	5.1	56.6
1995	22.4	165.1	29.2	7.4	5.3	5.3	56.9
1996	22.0	166.5	29.5	7.8	5.5	5.5	57.0
1997	22.5	167.2	29.6	8.0	5.6	5.6	57.7
1998	21.0	164.0	29.2	7.5	5.3	5.3	55.5
1999	21.8	167.4	29.6	7.9	5.5	5.5	56.9

<sup>1</sup> The American Gas Association estimates of natural gas proved reserves include volumes of gas held in underground storage. In 1979, this volume amounted to 4.9 trillion cubic feet. Energy Information Administration (EIA) data do not include gas in underground storage.

<sup>2</sup> Crude oil equivalent. Natural gas and natural gas liquids are converted to Btu on the basis of annual average conversion factors. See Appendix A.

NA=Not available.

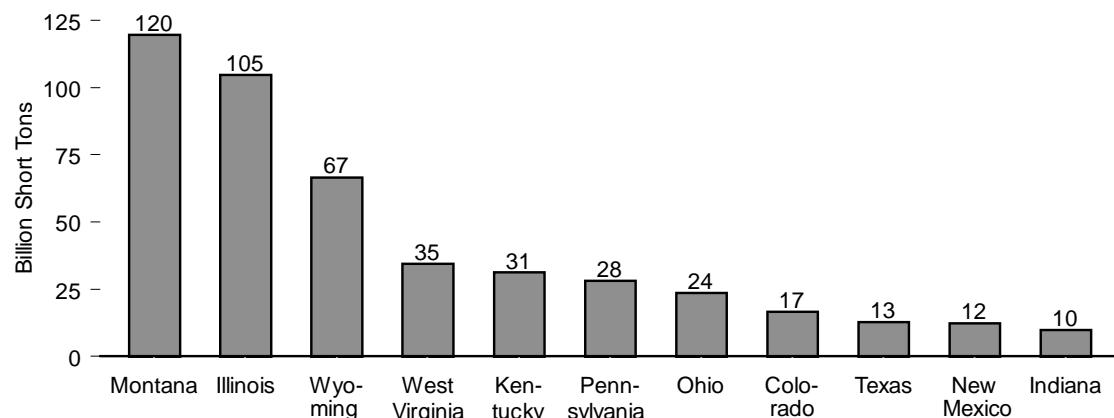
Note: Data are at end of year.

Web Page: [http://www.eia.doe.gov/oil\\_gas/petroleum/pet\\_frame.html](http://www.eia.doe.gov/oil_gas/petroleum/pet_frame.html).

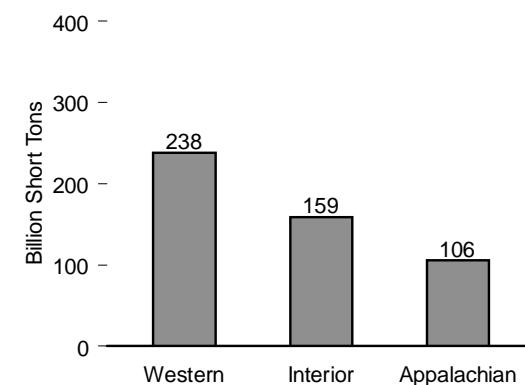
Sources: **API/AGA Data:** American Gas Association, American Petroleum Institute, and Canadian Petroleum Association (published jointly). *Reserves of Crude Oil, Natural Gas Liquids and Natural Gas in the United States and Canada as of December 31, 1979*. Volume 34, June 1980. **EIA Data:** • 1977-1988—EIA, *U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves*, annual reports. • 1989 forward—EIA, *U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves Annual Report 1999* (December 2000), Table 1.

**Figure 4.11 Coal Demonstrated Reserve Base, January 1, 2000**

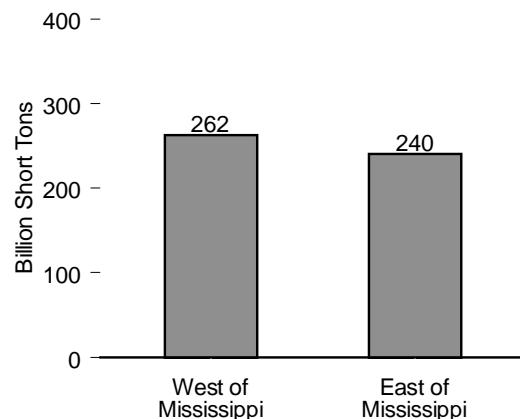
**By Key State**



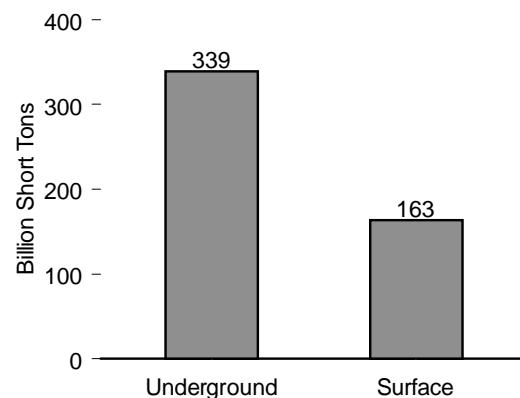
**By Region**



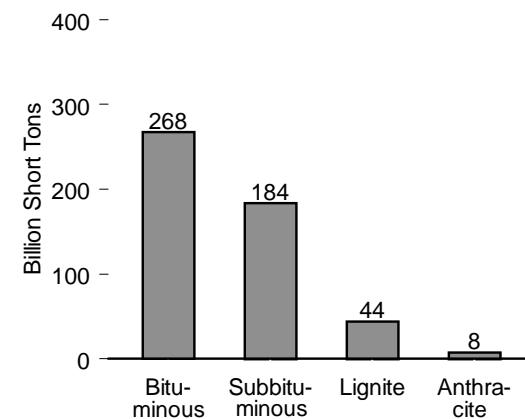
**West and East of Mississippi**



**By Mining Method**



**By Rank**



Note: Because vertical scales differ, graphs should not be compared.

Source: Table 4.11.

**Table 4.11 Coal Demonstrated Reserve Base, January 1, 2000**

(Billion Short Tons)

Region and State	Anthracite	Bituminous Coal		Subbituminous Coal		Lignite	Total		
		Underground	Surface	Underground	Surface	Surface <sup>1</sup>	Underground	Surface	Total
<b>Appalachian</b>	<b>7.3</b>	<b>73.5</b>	<b>23.8</b>	<b>0.0</b>	<b>0.0</b>	<b>1.1</b>	<b>77.4</b>	<b>28.3</b>	<b>105.7</b>
Alabama	0.0	1.2	2.2	0.0	0.0	1.1	1.2	3.2	4.4
Kentucky, Eastern	0.0	1.8	9.7	0.0	0.0	0.0	1.8	9.7	11.5
Ohio	0.0	17.7	5.8	0.0	0.0	0.0	17.7	5.8	23.5
Pennsylvania	7.2	20.0	1.0	0.0	0.0	0.0	23.9	4.3	28.2
Virginia	0.1	1.3	0.6	0.0	0.0	0.0	1.4	0.6	2.0
West Virginia	0.0	30.3	4.2	0.0	0.0	0.0	30.3	4.2	34.5
Other <sup>2</sup>	0.0	1.2	0.4	0.0	0.0	0.0	1.2	0.4	1.5
<b>Interior</b>	<b>0.1</b>	<b>118.0</b>	<b>27.6</b>	<b>0.0</b>	<b>0.0</b>	<b>13.2</b>	<b>118.0</b>	<b>40.8</b>	<b>158.8</b>
Illinois	0.0	88.2	16.6	0.0	0.0	0.0	88.2	16.6	104.8
Indiana	0.0	8.8	0.9	0.0	0.0	0.0	8.8	0.9	9.8
Iowa	0.0	1.7	0.5	0.0	0.0	0.0	1.7	0.5	2.2
Kentucky, Western	0.0	16.1	3.7	0.0	0.0	0.0	16.1	3.7	19.8
Missouri	0.0	1.5	4.5	0.0	0.0	0.0	1.5	4.5	6.0
Oklahoma	0.0	1.2	0.3	0.0	0.0	0.0	1.2	0.3	1.6
Texas	0.0	0.0	0.0	0.0	0.0	0.0	12.7	0.0	12.7
Other <sup>3</sup>	0.1	0.3	1.1	0.0	0.0	0.5	0.4	1.6	2.0
<b>Western</b>	<b>(s)</b>	<b>22.4</b>	<b>2.3</b>	<b>121.3</b>	<b>62.3</b>	<b>29.6</b>	<b>143.8</b>	<b>94.3</b>	<b>238.1</b>
Alaska	0.0	0.6	0.1	4.8	0.6	(s)	5.4	0.7	6.1
Colorado	(s)	8.0	0.6	3.8	0.0	4.2	11.8	4.8	16.6
Montana	0.0	1.4	0.0	69.6	32.8	15.8	71.0	48.6	119.5
New Mexico	(s)	2.7	0.9	3.5	5.2	0.0	6.2	6.2	12.4
North Dakota	0.0	0.0	0.0	0.0	0.0	9.3	0.0	9.3	9.3
Utah	0.0	5.4	0.3	0.0	0.0	0.0	5.4	0.3	5.7
Washington	0.0	0.3	0.0	1.0	(s)	(s)	1.3	0.0	1.4
Wyoming	0.0	3.8	0.5	38.7	23.7	0.0	42.5	24.1	66.6
Other <sup>4</sup>	0.0	0.1	0.0	(s)	(s)	0.4	0.1	0.4	0.5
<b>U.S. Total</b>	<b>7.5</b>	<b>213.8</b>	<b>53.8</b>	<b>121.3</b>	<b>62.3</b>	<b>43.9</b>	<b>339.3</b>	<b>163.4</b>	<b>502.7</b>
States East of the Mississippi River	7.3	186.8	45.0	0.0	0.0	1.1	190.8	49.5	240.3
States West of the Mississippi River	0.1	27.0	8.7	121.3	62.3	42.8	148.5	113.9	262.4

<sup>1</sup> Lignite resources are not mined underground in the United States.

<sup>2</sup> Georgia, Maryland, North Carolina, and Tennessee.

<sup>3</sup> Arkansas, Kansas, Louisiana, and Michigan.

<sup>4</sup> Arizona, Idaho, Oregon, and South Dakota.

(s)=Less than 0.05 billion short tons.

Notes: • See U.S. Coal Reserves: 1997 Update on the Web Page for a description of the methodology used to produce these data. • Data represent known measured and indicated coal resources meeting

minimum seam and depth criteria, in the ground as of January 1, 2000. These coal resources are not totally recoverable. Net recoverability ranges from 0 percent to more than 90 percent. Fifty-four percent of the demonstrated reserve base of coal in the United States is estimated to be recoverable. • Totals may not equal sum of components due to independent rounding.

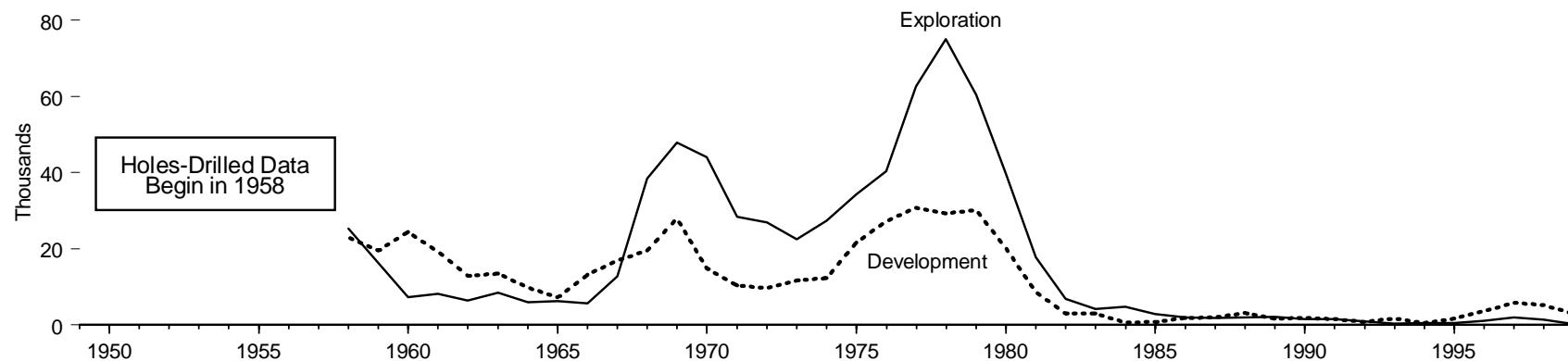
Web Page: <http://www.eia.doe.gov/fuelcoal.html>.

Source: Energy Information Administration, Coal Reserves Database.

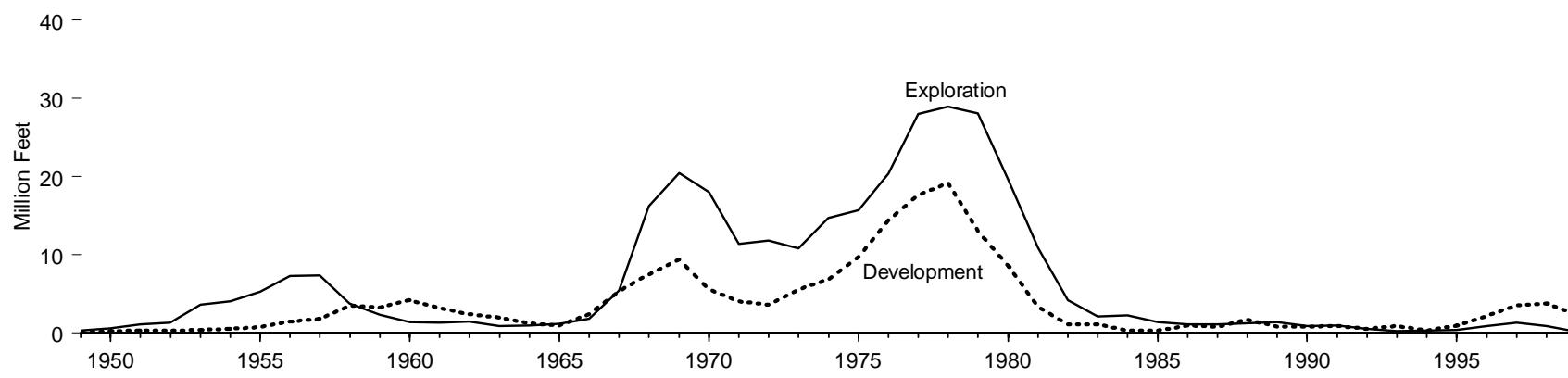
**Figure 4.12 Uranium Exploration and Development Drilling**

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**Holes Drilled, 1958-1999**



**Footage Drilled, 1949-1999**



Source: Table 4.12.

**Table 4.12 Uranium Exploration and Development Drilling, 1949-1999**

Year	Exploration <sup>1</sup>		Development <sup>2</sup>		Total	
	Holes Drilled (thousands)	Footage Drilled (million feet)	Holes Drilled (thousands)	Footage Drilled (million feet)	Holes Drilled (thousands)	Footage Drilled (million feet)
1949	NA	0.36	NA	0.05	NA	0.41
1950	NA	0.57	NA	0.21	NA	0.78
1951	NA	1.08	NA	0.35	NA	1.43
1952	NA	1.36	NA	0.30	NA	1.66
1953	NA	3.65	NA	0.37	NA	4.02
1954	NA	4.06	NA	0.55	NA	4.61
1955	NA	5.27	NA	0.76	NA	6.03
1956	NA	7.29	NA	1.50	NA	8.79
1957	NA	7.35	NA	1.85	NA	9.20
1958	25.32	3.76	22.93	3.49	48.25	7.25
1959	16.25	2.37	19.59	3.28	35.84	5.65
1960	7.34	1.40	24.40	4.21	31.73	5.61
1961	8.26	1.32	19.31	3.19	27.57	4.51
1962	6.44	1.48	12.87	2.43	19.31	3.91
1963	8.47	0.88	13.53	1.98	22.01	2.86
1964	5.97	0.97	9.91	1.25	15.88	2.21
1965	6.23	1.16	7.33	0.95	13.56	2.11
1966	5.75	1.80	13.18	2.40	18.93	4.20
1967	12.79	5.44	16.95	5.33	29.74	10.76
1968	38.47	16.23	19.53	7.53	58.00	23.75
1969	47.85	20.47	28.01	9.39	75.86	29.86
1970	43.98	17.98	14.87	5.55	58.85	23.53
1971	28.42	11.40	10.44	4.05	38.86	15.45
1972	26.91	11.82	9.71	3.61	36.62	15.42
1973	22.56	10.83	11.70	5.59	34.26	16.42
1974	27.40	14.72	12.30	6.84	39.70	21.56
1975	34.29	15.69	21.60	9.73	55.89	25.42
1976	40.41	20.36	27.23	14.44	67.64	34.80
1977	62.60	27.96	30.86	17.62	93.45	45.58
1978	75.07	28.95	29.29	19.15	104.35	48.10
1979	60.46	28.07	30.19	13.01	90.65	41.08
1980	39.61	19.60	20.19	8.59	59.80	28.19
1981	17.75	10.87	8.67	3.35	26.42	14.22
1982	6.97	4.23	3.00	1.13	9.97	5.36
1983	4.29	2.09	3.01	1.08	7.30	3.17
1984	4.80	2.26	0.72	0.29	5.52	2.55
1985	2.88	1.42	0.77	0.34	3.65	1.76
1986	1.99	1.10	1.85	0.97	3.83	2.07
1987	1.82	1.11	1.99	0.86	3.81	1.97
1988	2.03	1.28	3.18	1.73	5.21	3.01
1989	2.09	1.43	1.75	0.80	3.84	2.23
1990	1.51	0.87	1.91	0.81	3.42	1.68
1991	1.62	0.97	1.57	0.87	3.20	1.84
1992	0.94	0.56	0.83	0.50	1.77	1.06
1993	0.36	0.22	1.67	0.89	2.02	1.11
1994	0.52	0.34	0.48	0.32	1.00	0.66
1995	0.58	0.40	1.73	0.95	2.31	1.35
1996	1.12	0.88	3.58	2.16	4.70	3.05
1997	1.94	1.33	5.86	3.56	7.79	4.88
1998	1.37	0.89	5.23	3.75	6.60	4.64
1999	0.27	0.18	2.91	2.33	3.18	2.50

<sup>1</sup> Includes surface drilling in search of new ore deposits or extensions of known deposits and drilling at the location of a discovery up to the time the company decides sufficient ore reserves are present to justify commercial exploitation.

<sup>2</sup> Includes all surface drilling on an ore deposit to determine more precisely size, grade, and configuration subsequent to the time that commercial exploitation is deemed feasible.

NA=Not available.

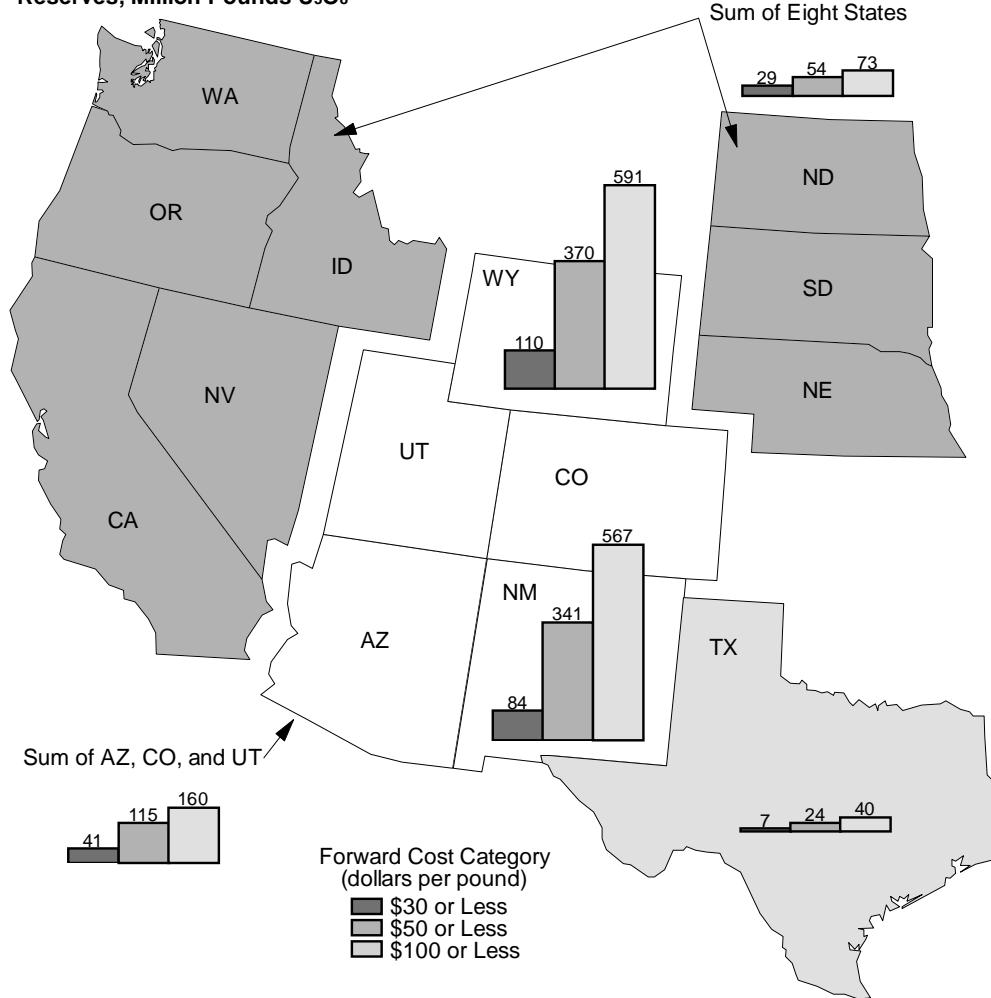
Note: Totals may not equal sum of components due to independent rounding.

Web Page: <http://www.eia.doe.gov/fuelnuclear.html>.

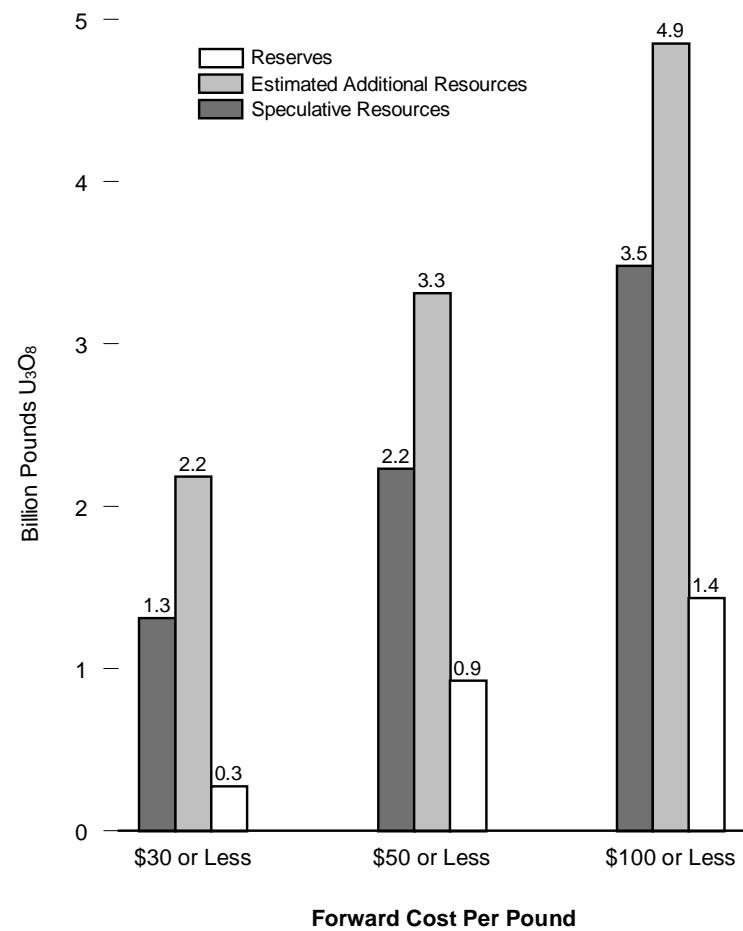
Sources: • 1949-1981—U.S. Department of Energy, Grand Junction Office, *Statistical Data of the Uranium Industry*, January 1, 1983, Report No. GJO-100 (1983), Table VIII-5. • 1982 forward—Energy Information Administration, *Uranium Industry Annual*, annual reports.

**Figure 4.13 Uranium Reserves and Resources, 2000**

**Reserves, Million Pounds U<sub>3</sub>O<sub>8</sub>**



**Reserves and Resources**



Notes: • Data are at end of year. • States shaded by group correspond to categories listed under "Reserves" on Table 4.13.

Source: Table 4.13.

**Table 4.13 Uranium Reserves and Resources, 2000**(Million Pounds U<sub>3</sub>O<sub>8</sub>)

Resource Category and State	Forward Cost Category (dollars per pound) <sup>1</sup>		
	\$30 or Less	\$50 or Less	\$100 or Less
<b>Reserves<sup>2</sup></b> .....	<b>271</b>	<b>904</b>	<b>1,430</b>
New Mexico .....	84	341	567
Wyoming .....	110	370	591
Texas .....	7	24	40
Arizona, Colorado, Utah .....	41	115	160
Others <sup>3</sup> .....	29	54	73
<b>Potential Resources<sup>4</sup></b>			
Estimated Additional Resources .....	2,180	3,310	4,850
Speculative Resources .....	1,310	2,230	3,480

<sup>1</sup> Forward costs are all operating and capital costs (in current dollars) yet to be incurred in the production of uranium from estimated resources. Excluded are previous expenditures (such as exploration and land acquisitions), taxes, profit, and the cost of money. Generally, forward costs are lower than market prices. Resource values in forward-cost categories are cumulative; that is, the quantity at each level of forward-cost includes all reserves/resources at the lower cost in that category.

<sup>2</sup> The Energy Information Administration category of uranium reserves is equivalent to the internationally reported category of Reasonably Assured Resources (RAR).

<sup>3</sup> California, Idaho, Nebraska, Nevada, North Dakota, Oregon, South Dakota, and Washington.

<sup>4</sup> Shown are the mean values for the distribution of estimates for each forward-cost category, rounded to the nearest million pounds U<sub>3</sub>O<sub>8</sub>.

Note: Data are at end of year.

Web Page: <http://www.eia.doe.gov/fuelnuclear.html>.

Sources: • Forward Costs \$30 or Less or \$50 or Less—Energy Information Administration (EIA), *Uranium Industry Annual 2000* (May 2001), Tables B1 and B4. • Forward Costs \$100 or Less—EIA, Office of Coal, Nuclear, Electric and Alternate Fuels database as of December 31, 2000.

## Energy Resources

**Note 1.** These volumes are the sum of the respective mean estimates in United States Geological Survey, *1995 National Assessment of United States Oil and Gas Resources*, Circular 1118 (Washington DC, 1995), pp. 2 and 17-19, for the onshore United States and jurisdiction offshore waters, and in Minerals Management Services, *An Assessment of the Undiscovered Hydrocarbon Potential of the Nation's Outer Continental Shelf*, OCS Report MMS 96-0034 (Washington DC, 1996), pp. 14 and 18, for the Federal jurisdiction offshore.

Conventionally reservoired deposits are discrete subsurface accumulations of crude oil or natural gas usually defined, controlled, or limited by hydrocarbon/water contacts. Unconventionally reservoired deposits (continuous-type accumulations) are geographically extensive subsurface accumulations of crude oil or natural gas that generally lack well-defined hydrocarbon/water contacts. Examples include coalbed methane, "tight gas," and auto-sourced oil- and gas-shale reservoirs. Ultimate recovery appreciation (reserve growth) is the volume by which the estimate of total recovery from a known oil or gas reservoir or aggregation of such reservoirs

is expected to increase during the time between discovery and permanent abandonment.

For purposes of comparison, the Potential Gas Committee, an industry-sponsored group of experts, biennially provides another geologically-based estimate of the Nation's natural gas resources. The latest mean estimate, published in "Potential Supply of Natural Gas in the United States," December 31, 1996, is 1,067 trillion cubic feet. This volume includes undiscovered conventionally reservoired deposits, expected ultimate recovery appreciation, coalbed methane, and tight gas where it is believed to be technically recoverable and marketable at reasonable costs.

**Note 2.** For 1970 forward, annual well completions are estimated by EIA based on individual well reports submitted to the American Petroleum Institute (1970-1994) and to Petroleum Information/Dwights LLC (1995 forward). The as-received well completion data for recent years are incomplete due to delays in the reporting of wells drilled. EIA therefore statistically imputes the missing data to provided estimates of total well completions and footage where necessary.